

1 CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

2 DEPARTMENT OF TOXIC SUBSTANCES CONTROL

3 UNEXPLODED ORDNANCE WORKSHOP

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11 Department of Toxics Substances Control

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2 PROCEEDINGS

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4 MR. LOWRY: Good morning. And welcome to this
5 workshop on unexploded ordnance. My name is Ed Lowry.
6 I'm the director of Toxic Substances Control for the
7 State of California. I have several people with me
8 today, and we have you here as well.

9 I want to thank everyone for coming. I know
10 some of you made extraordinary arrangements to be here.
11 I'd like to welcome you both to Sacramento and to this
12 marvelous auditorium which we will have all day today
13 and my department has until about December of this year
14 when we will be moving to more government oriented
15 quarters.

16 This building which we have the privilege of
17 meeting in is owned by the Public Employees Retirement
18 System. So it's not your tax dollars at work, but it is
19 in fact my retirement dollars at work, and we have a
20 wonderful opportunity to be here.

21 I apologize a little bit for the setup. I
22 think as you can see this room is designed for a board
23 of, I don't know, 17 or 18 members, and I'm a little too
24 far away from you. It reminds me a bit of the Oakland
25 Coliseum where you need a good pair of binoculars to see

1 the pitcher's mound due to the circular nature of that
2 stadium.

3 With me on my right is Bonnie Wolstoncroft, a
4 lawyer for the department who has been working on
5 military issues, unexploded ordnance issues. On my left
6 is Stan Phillippe, our chief of the military facilities
7 branch of the department, mediation group, and Jim
8 Austreng to his left is our staff member, probably one
9 of the recognized civilian nonmilitary experts on
10 unexploded ordnance. They will assist me in this
11 program today.

12 What this workshop is all about is an
13 opportunity for me as Governor Davis' representative and
14 the department at his direction to get information. I
15 intend to listen. The people next to me at this table
16 also intend to listen. We will probably do more
17 listening than asking, but we will ask questions as
18 well.

19 We need this information, the information which
20 we are seeking today, because the law requires us to
21 make important decisions and to participate in
22 importance processes which can fundamentally affect the
23 lives and health of the citizens of this state. The
24 subject of our inquiry is unexploded ordnance. Our
25 success in war, our success in defending this country

1 and protecting freedom has left us many legacies, one of
2 which is a legacy of peace, which brings with it
3 downsizing of the military closing of military bases and
4 some of those military bases, indeed some bases which
5 are still open, have as part of the legacy of the cold
6 war, Korean War, Vietnam War and wars before that
7 unexploded ordnance on the ground and under the ground.

8 We need as a country, as a state, as citizens
9 and as government to deal with these problems. Several
10 factors coincided which caused me to call this workshop.
11 The first was a recognition that unexploded ordnance,
12 and now I will lapse a little bit into acronyms. We
13 have a lot of people from the federal government and
14 from the military who, and state government, tend to
15 speak in acronyms. One acronym, we're going to hear it
16 now, is UXO. I'm going to say it now.

17 Our recognition was that UXO is here for us to
18 deal it. It will not go away. We will see it again and
19 again. This is not a one-time decision that we have to
20 make at one particular installation, and for that reason
21 that was the first reason which led me to believe that
22 we needed a workshop on the subject.

23 Second was the level of interest in this
24 subject throughout the state, from Tourtelot in Benicia,
25 to Fort Ord in Monterey, to Aerojet facilities in

1 Southern California, all the way down to the Mexican
2 border we have interest in UXO. We have experiences of
3 our citizens dealing with these problems, both in how to
4 deal with it and regrettably sometimes in the
5 catastrophic experiences when we have not planned
6 adequately.

7 The third was the important recommendation
8 which I will have to make on more than one occasion, I'm
9 sure, but the Governor's personal signature for early
10 transfers of property where I need to recommend to him
11 whether we are confident that public health and safety
12 will be protected to allow an early transfer to occur.

13 And a corollary to that in our role of
14 oversight, we have an advice and comment role and an
15 integral role in formulating what needs to be done about
16 UXO on property in this state and how we can assure the
17 safety of our citizens.

18 The fourth factor which coincided to bring you
19 all here today was a concern by many that DTSC had not
20 been, DTSC, your second acronym, Department of Toxics
21 Substance Control, of course, had not been applying
22 clearly understood standards in its oversight role of
23 the base conversion process.

24 Fifth was a general agreement that in fact the
25 standards are not clear. Just six years ago in 1994 the

1 Inspector General said that expended ordnance and
2 explosive waste cleanup requirements and guidance
3 developed by Department of Defense and military services
4 are incomplete, vague and inconsistent.

5 We are six years down the line from that 1994
6 statement. Are the standards any clearer today?
7 Clearly the science is better. We need information to
8 find out how much the science is better, how much better
9 the technology is and how better are the standards.

10 Our attempt as a state government agency to get
11 beyond the federal inspector general's comments has
12 proved daunting and for that reason we are asking you to
13 help us today.

14 We know that the UXO, unexploded ordnance, is a
15 special category of waste. As this department, we are
16 experienced and accustomed to managing chemical based
17 risk. We are responsible for cleaning up sites where
18 chemicals have been left in the ground, toxic chemicals,
19 chemicals which have serious and enormous consequences
20 to the people of this state.

21 We have a lot of experience in that role, but
22 we, like other regulatory agencies, and indeed like the
23 federal government, are not accustomed to declaring a
24 site sufficiently clean of UXO to allow businesses to
25 operate, to allow our children to live there and to

1 allow schools to be built. And the consequences of
2 mistakes are plain. Whereas we can be confident or
3 somewhat comforted in hiding behind a one in 100,000, a
4 one in a million risk that someone will get cancer
5 because we don't know and indeed will not have to make a
6 personal apology to the family of a person who loses in
7 that risk lottery, we will be painfully evident and
8 immediately aware when the whatever risk we accept comes
9 home with unexploded ordnance.

10 Even Congressman Sam Farr of Monterey in a
11 hearing which he held with U. S. House of
12 Representatives commented a bit on the irony of being
13 the son of an early lawyer in Seaside who represented a
14 family whose children brought home something which
15 looked pretty interesting to them which they picked up
16 in the field and caused drastic consequences to that
17 family.

18 So what I hoped to do in calling this meeting
19 was to get the experts and anyone who has something
20 useful to say to come help educate me and my department
21 so that we can perform our obligations in returning
22 property to productive use for our citizens.

23 We distributed the announcement of this meeting
24 in late January and the response has been positive.
25 Look around here. We've got a full auditorium of people

1 on a meeting which was called only a couple months ago.

2 With more time and perhaps better brains we
3 could have been a little bit better in getting the word
4 out and planning. I think the local reuse authorities
5 and local government is not represented as well as it
6 probably should be as speakers in today's program, and
7 it is my commitment, indeed the Secretary of
8 Environmental Protection's commitment to make sure that
9 local government has a role in this process, and if we
10 need to hold further workshops and further meetings to
11 get your input, we will indeed do that.

12 And you should all know that today's
13 presentations will be videotaped by a member of our
14 staff and we have a reporter who is recording this
15 session for the purpose of having a broader
16 dissemination of the information which we are getting
17 today. There will be a transcript of these proceedings
18 on our website and those of you who are unable to say
19 what you need to say in the limited time today are
20 welcome to submit additional written comments so that we
21 can consider them as well.

22 I hope we can get input on some basic
23 questions. One, are there standards which are readily
24 available to be applied in UXO cleanup? Two, what land
25 uses are protective? Three, as I mentioned before, how

1 good is the technology and is it getting better? Four,
2 are there experiences from which we can draw, both
3 positive and negative, in this process? Five, what's an
4 acceptable cleanup level? What are acceptable uses with
5 a particular cleanup level? And, six, what are
6 acceptable risks and how do we manage those risks,
7 indeed how do we quantify those risks?

8 A number of questions about the process of this
9 workshop have been asked, and I'd like to answer a few
10 of those, and then I'll turn it over to Claire Best, who
11 will give a little more overview on the process, the
12 mechanics of what we're doing and also where's the
13 cafeteria, where are the restrooms and so forth like
14 that.

15 What we wanted to do was to get here as
16 prepared panel folks who have been working with UXO,
17 folks who we believe and folks who believe themselves
18 that they have something important to say about the
19 subject to help educate us. That's the prepared part of
20 the agenda, and I believe an agenda has been
21 distributed.

22 We also have Jim Austreng, who I mentioned
23 earlier, introduced earlier, who is our unexploded
24 ordnance coordinator. He will give an overview of the
25 department's perspective in terms of what we think the

1 problem is to start the program at 9:10. If you turn
2 around and look at the clock, of course, it's 9:22,
3 which leads me also to say I think we're going to be
4 behind schedule all day. We're going to try to keep to
5 a schedule. We recognize it doesn't quite work that
6 way.

7 After the prepared program, those of you who
8 want to make statements will be given three minutes to
9 do so. If you can't say what you need to say in three
10 minutes, as I said earlier, please put your comments in
11 writing and we will consider them as well. Claire is
12 going to be our time cop and flash -- how much time do I
13 have left?

14 (Laughter.)

15 MR. LOWRY: There we go. So I think with that
16 I would only like to say that this meeting and
17 reiterate, reemphasize that I do not intend this
18 workshop either to delay the process which we are
19 undergoing or to be a mechanism by which we cannot make
20 progress. It is here for us to get information. It is
21 here for us to make progress, and once again, I'm very,
22 very happy that you are here today.

23 Claire, can you give us a --

24 MS. BEST: Yes, thank you, Ed. Just briefly,
25 there is a cafeteria out the door to your left and the

1 restrooms are to your left as you go out in the lobby.

2 And also there are another set of restrooms behind the
3 elevator bank down the hall.

4 We will try to accommodate those of you who are
5 making comments during the public speaking session. If
6 you have out of town travel arrangements, you need to
7 leave early, please let us know.

8 Everybody needs to complete a speaker's request
9 form to speak during the public comment section, and
10 would you please give your forms to Kim Forman. She's
11 in the back of the auditorium in a cobalt blue suit.
12 And you can put a mark on it, you know, if you have to
13 leave early, why don't you put a big T on it so we know
14 you're traveling and we need to shove you to the front
15 of the pile.

16 Also, when you get up to speak, would you
17 please state your name for the court reporter. And we
18 have microphones for the public to use on both sides of
19 the auditorium, trying to make it a little convenient.
20 I know there is no middle aisle. So we'll try and call
21 maybe two or three names at a time, and then you can
22 just come up and take your turn speaking.

23 We wanted to state that there won't be a formal
24 response to comments made for today's process, but we
25 will be posting the transcript on our website so you can

1 take a look at it there, and certainly send in your
2 comments, and the instructions for sending in comments
3 if you don't have time to speak today are on this blue
4 form. So please help yourself. It should be out in the
5 lobby on one of the tables along with the handouts. And
6 anybody who didn't get an agenda, please feel free to
7 get up and help yourself to an agenda. They are also on
8 the table in the lobby.

9 We will be taking periodic breaks. So you can
10 give your speaker request forms to Kim at the break time
11 if you don't have time to do it now. And I guess that's
12 about it, Ed.

13 MR. LOWRY: Thank you. I'm reminded of the
14 friend I had in college who starting in his freshman
15 year would write "graduating senior" at the bottom of
16 all of his final exams with the hope that he might get a
17 little pity if he were on the margin of passing or
18 failing the course. Keep that in mind when you write
19 I've got a plane which is leaving at 2:30 today.

20 Why don't we move to Jim Austreng.

21 MR. AUSTRENG: I think I'm got going to get up
22 and walk the floor here. That's my approach to reaching
23 out and giving some information. And as Mr. Lowry said,
24 I'm here to give an overview of the department's
25 perspective on our cleanup program and where our

1 questions are.

2 I want to start off, I know we're going to be
3 behind and I'm going to make up some of that time
4 because I have only about 12 slides and I'm going to zip
5 through them, but I'm going to take one minute and give
6 you a story about preparation for this event.

7 Last night I decided to do a little bit of run
8 to reduce the anxiety, speaker anxiety, and I was
9 thinking about a few minutes into the run about a
10 co-worker's comment about this is my 15 minutes. I
11 thought, maybe there is a sequel to Erin Brockovich and
12 Julia Roberts in the making. And then I realized, wait
13 a minute, Julia Roberts sat across the table from PG&E
14 and their tanks. They didn't have turrets. I said, oh,
15 no, that movie suddenly went to Forrest Gump.

16 So with that, I will run through the slides.
17 The three areas I'm going to cover will be the scope of
18 the problem as we see it. We've heard estimates
19 anywhere 10 to 15 million acres, 25 million acres
20 nationwide as an ordnance problem. I want to bring it
21 down to California perspective. And then we're going to
22 talk about what that means to us as far as the
23 uncertainties and how do we go about addressing it and
24 then the six areas of concern I'll briefly run through.
25 Mr. Lowry has already done that.

1 Let me start out by referencing the Corps of
2 Engineers formally used defense side database. They
3 list 171 sites as potential ordnance contaminated sites.
4 In California we've done a data review and we think that
5 number is more like 260.

6 Now, we add the next issue of closing bases and
7 manufacturing facilities, testing ranges and to
8 complicate things further, we've got nonstockpiled
9 chemical materials that could be out on some of these
10 properties. So when we put our arms around that, we
11 don't have an exact acreage figure, but it becomes
12 pretty ominous. Some of those big sites are Fort Ord,
13 Benicia, Mare Island, and East Elliott, East Elliott
14 being the source of the Tierra Santa development years
15 back Mr. Lowry referenced when kids were killed.

16 So what do we do about this? We send in the
17 experts. That's all of us working together. The
18 explosive ordnance guys go in there, they do the best
19 damn job they can. They have limitations, though. We
20 know they put their life on the line in a daily event
21 trying to find what they can, but when you go out to try
22 to detect this stuff, detection is affected by many
23 parameters. And do we achieve a hundred percent
24 protection in levels of cleanup? That's probably not
25 the case.

1 So what do we do? We also have complications
2 of historical. If we go to the test beds that we've
3 seen at Jefferson Proving Ground, we see that level of
4 detection is somewhere in the upper 90 percent and we
5 take that live site, it drops down to 70 percent.

6 Now, there are cases out there that the numbers
7 vary, but generally we confirm that we don't find a
8 hundred percent.

9 Now, let's go to other complications. We have
10 incomplete records to try to find out where to look.
11 Activities unknown at certain facilities that would
12 suggest or not that ordnance could be left behind. So
13 the uncertainty is compounded.

14 So we take an action, and then what we're
15 seeing is there is a varying approach on how that action
16 is taken to come to the conclusion of enough's enough.
17 In some cases, we sweep the entire area. In some cases,
18 it's proportion by statistics. In some cases, it's dig
19 all anomalies, in some cases it's not. So there is a
20 variability there, concluding us to know that we can
21 reduce the risk, but we can't eliminate it most often.

22 We've generated this table out of, well, what
23 if's. We have a probability of a 75 to 95 percent
24 detection. We have run through some numbers of initial
25 acre ordnance density, such as the 10-acre, one-acre,

1 parcels. Now, this is just a what if scenario, and we
2 can see in the residential situation, if you go through
3 the calculations, if you are on a lot basis, even at 10
4 items per acre and one items per acre, you still have
5 that threat.

6 What do we do about that? And that gets us to
7 our six issues, and just go through them because
8 Mr. Lowry already introduced them, and that's what we're
9 here to hear from. We don't have all the answers. We'd
10 certainly like to achieve them, but we have to do it
11 together.

12 And with that I think I made up some time and
13 I'll end for now.

14 MR. LOWRY: Thank you, Jim.

15 Why don't we move immediately into the program,
16 it's 9:32 and the Department of Defense, Mr. Gary Vest,
17 Colonel Dan Tompkins and Dr. Jeffrey Marqusee have all
18 come here today, and what I think would be useful is for
19 the three of you to move to the center table where there
20 are three seats and we'd like you to give us your
21 perspective on the problems we're facing.

22 Gary Vest is the Principal Assistant Deputy
23 Undersecretary of Defense for Environmental Security.
24 Colonel Dan Tompkins is the Chairman of the Department
25 of Defense Explosive Safety Board and Dr. Marqusee, if

1 I'm pronouncing your name properly.

2 MR. MARQUSEE: No.

3 MR. LOWRY: Close enough perhaps. Is the
4 Technical Director of the Strategic Environmental
5 Research and Development Program. He's also director of
6 the Environmental Security Technology Certificate
7 Program for the Department of Defense.

8 Gentlemen, thank you very much for coming here,
9 and the program is yours.

10 MR. VEST: Thank you very much for allowing us
11 to be here with you in your process. I think your
12 process is very, very important.

13 I personally am here today for several reasons.
14 One is to introduce my colleagues, who are indeed
15 experts in their respective areas, but also very
16 importantly to underscore the importance we place on the
17 topic and what you are doing and our participation in
18 your process over time.

19 I would like to say, however, that by
20 profession I am a planner. I am a city regional land
21 use planner, and I would like to offer just a couple
22 thoughts. In many respects what we're really dealing
23 with here is a land use planning issue, and in many
24 respects the concepts are available, and there are many
25 tools that are known and available. However, there are

1 many tools and methodologies that are either in
2 development or are still in our future. And, of course,
3 we must take an approach to use those tools and
4 methodologies within a conceptual framework that is
5 responsive to the circumstances of specific places and
6 specific times.

7 We view and have always viewed UXO as
8 predominantly a safety issue. Our experience is long,
9 our experience is very comprehensive in dealing with UXO
10 as a safety issue. However, we do recognize that there
11 needs to be a planning process, a planning process which
12 takes not only our experience, but other experience as
13 well as tools into account in a local planning process
14 which draws upon the experiences and standards to
15 develop local approaches, and in many respects one could
16 think of it in terms of developing local standards for
17 applications as appropriate in given circumstances,
18 drawing on guidelines and parameters known from other
19 experiences.

20 We also are very, very much committed to an
21 open process, a process that balances the values, the
22 mandates and ultimately gets as close as possible to
23 overall public good.

24 With that, I would like to turn now to Colonel
25 Dan Tompkins, who is the chairman of the Department of

1 Defense Explosive Safety Board, and principally what he
2 will be addressing today is how we have done our
3 business in UXO in the past, what we are doing today,
4 and how we are continuing to address that.

5 And then it will move to Dr. Jeff Marqusee, who
6 is our principal in charge of the technology world, and
7 he will address what is available today, what is in the
8 works and our expectations for the future.

9 Dan.

10 COLONEL TOMPKINS: Thank you, Mr. Vest, and
11 thank you for inviting me to this forum, too.

12 Explosive safety has been a significant part of
13 my job for the last 26 years, and I always look forward
14 to opportunities to share what knowledge I have in that
15 area with audiences as large and as intelligent as this.

16 I have a brief outline here of the subjects I'd
17 like to cover. I realize that several of these topics
18 will be covered by other people later on in the day, so
19 I'll try to be as brief as possible given our
20 constraints, but I would like to explain what the DDESB
21 is.

22 We were chartered after a naval ammunition
23 explosion in 1926 specifically by Congress to make sure
24 that never again would the military or the Department of
25 Defense, actually at that time the War Department,

1 hazards large populations of civilians. Of course,
2 we're equally concerned with the individuals who live on
3 our bases. So we are concerned with any explosive
4 safety risk to any personnel anywhere.

5 To show our organization, I do work for
6 Mr. Vest and Miss Sherry Goodman. These are our
7 principal functions of the board. We are SecDef's
8 advisory board for explosive safety issues. The bullet
9 that applies here is the fifth one. We do review and
10 approve all base closure and range clearance plans in
11 our office for land within DOD.

12 Our focus is reduce the explosives safety
13 hazard. Unfortunately, we only have one individual in
14 our whole office that's a trained environmentalist.
15 Miss Goodman has promised she's going to help me learn
16 more about the environment as I serve this tour, but
17 basically we're worried about explosives safety hazards.

18 We write a dynamic standard that covers all
19 areas of DOD explosives use, the entire life cycle of
20 any munitions item. Part of this standard deals with
21 UXO, and, of course, as it says there, it is a dynamic
22 standard. We take suggestions for change constantly.
23 We meet twice a year merely to consider changes that
24 people have suggested. We are, of course, are working
25 hard in the UXO area.

1 As I said earlier, we review all of the safety
2 submissions from all of the services. We have
3 recently -- we've always looked at UXO clearance
4 projects for compliance. We've beefed up that program
5 due to the continuing interest and some criticism of
6 clearances in the past.

7 We developed the DOD policy. We monitor
8 technology improvements. I'm not going to go into that
9 here because Dr. Marqusee will cover that thoroughly,
10 and we know that one of the ways to ensure that you've
11 done an adequate cleanup is to make sure that the
12 workforce personnel who did do that cleanup are
13 adequately qualified, and we are involved there, too.

14 The remediation process, as has been pointed
15 out earlier, is based on the future land use. And I
16 guess it's a chicken or the egg type thing. You can't
17 clean it to any use in some cases or you couldn't do
18 that without astronomical costs and unacceptable
19 environmental insult to the land.

20 You have to determine the boundaries of what
21 you're trying to clean. That's not always easy to do.
22 Of course, the types of UXO's suspected is critical to
23 your technique and to the procedures.

24 All of the bullets mentioned listed there have
25 some play in what we do, and, of course, we recommend

1 documenting all actions and continuing surveillance.

2 The explosives safety submissions that the
3 services submit to us must include each of these bullets
4 here. It's a very thorough plan. Some of them are
5 three three-inch three-ring binders. It takes my staff
6 quite a while to go through each and every page of that.
7 Sometimes I question whether they do, but they are
8 generally very thorough.

9 We this year, actually starting yesterday, are
10 beginning to do formal surveys of UXO sites. We've
11 picked six, partly because of our schedule and partly
12 because where the cleanups are in terms of the cleanup
13 progress. This will primarily allow us firsthand field
14 data when we make policy.

15 I don't know if this occurs in the State of
16 California, but nationally we find that the more time
17 people spend inside the beltway, sometimes the less
18 connected they are to what's really going on out in some
19 of our ranges. We're trying to fix that.

20 The remediation depth determination is based on
21 a whole number, a lot of factors, some of which are
22 listed there, most of the key ones are listed there, and
23 of course, they are placed on the planned end use.
24 These standards were set up as planning data by our
25 board back in the '94 time frame. They have not been

1 changed as of yet, although there are several proposals.

2 We don't really get involved in cost, but to
3 show the impact of cost I've taken a hypothetical
4 example -- this is not any particular range -- and to
5 show that actual removal of UXO is not that big a
6 component. It's just one more factor. There is removal
7 of scrap and removal of vegetation and several other
8 things are equally costly.

9 This right here to me explains the real
10 problem. The bottom item, should it be live, and that
11 one is not, is, well, it's actually easy to handle, but
12 it's very dangerous in that the exclusion zone will go
13 over 1250 feet. It's very easy to spot as long as it
14 didn't bury itself 20 feet in the ground.

15 However, the top item, which is live in this
16 picture, is much more hazardous. It doesn't penetrate
17 at all. It's only about the size of an egg, one of our
18 guidance pamphlets says, and it's attractive to kids.
19 Unfortunately, the fuse, developed for the Vietnam war,
20 was extremely poor; and in hindsight we know that it was
21 extremely poor. Very many of them have not gone off,
22 and they will go off eventually.

23 I'm not going to get into the methods of
24 clearance. Dr. Marqusee is going to cover that, but
25 this shows some of the technologies that he'll cover.

1 The only point I need to make on the technology
2 is from a safety officer's standpoint, I am not going to
3 approve a plan that suggests a cutting edge technology
4 if I cannot be convinced that it's going to result in
5 safe land when we're done. There have been some
6 cleanups with some very cutting edge technologies that
7 have proven to be unsuccessful. That's my only real
8 interest in technology. It has to be proven safe. It
9 can't just be -- Mr. Norris is going to address some
10 snake oil salesman. It can't be snake oil.

11 Some of the areas that the board is working in
12 now is, of course, we've been involved with the EPA and
13 other federal agencies in the Range Rule dialogue and
14 the Range Rule risk methodology. Some of the incidents
15 we're involved in have not come from actual range
16 clearances, but from the scrap removed from that range
17 or from other places; and, of course, we continue to
18 track the technology to make sure that when new
19 technology does come on line we will be there to say
20 that it is safe and certifiable.

21 This is how to get in touch with us. And I
22 think that's my last slide. Turn it over to
23 Dr. Marqusee.

24 MR. LOWRY: Doctor, before you start, just so
25 those in the crowd don't think that we're ignoring

1 anybody, we have monitors here, so we're not craning our
2 necks to look up there.

3 Go ahead, sir.

4 DR. MARQUSEE: There is a rather large
5 selection of slides here. I am not going to go through
6 of them. I have provided them as background information
7 and I will be around to answer any questions with regard
8 to them.

9 What I do want to cover, if I could have my
10 next slide, please, is three topics rather rapidly.
11 First, I think as many of you are aware of, Miss Goodman
12 and Mr. Field signed a memo last month on management
13 principles and I want to touch on how that impacts
14 technology selection, then spend the bulk of the time
15 talking about our view of the current state of
16 deployable technology, that is, things we feel mature
17 enough to be used on site, and very briefly give you a
18 spends of our R&D plan.

19 These are quotes from the memo signed out by
20 the two principals, and I have underlined one of the
21 critical points. We believe that as EPA, United States
22 EPA, that to the maximum extent practical, the permanent
23 record shall include sensor data that is digitally
24 recorded and georeferenced. Now, what I'm going to
25 spend most of the time is make you understand why we

1 said that.

2 What that effectively means is when it's
3 practical we believe sites should be investigated using
4 what we call digital geophysics, and later in the charts
5 there is a definition of that versus mag and flag so you
6 can fully understand it.

7 But also important to understand is the
8 selection of technology remains and should always remain
9 a site specific decision. The performance of the
10 technology will be site specific.

11 The other major point to emphasize is we do
12 believe there are advances in technology development
13 which are mature now and can have a significant impact
14 on how we characterize and therefore make decisions on
15 risk mitigation.

16 One of the things I'll touch on later is that
17 it's important and it going to take I think a continuing
18 education process to make sure that the broad group of
19 stakeholders involved in this process understand how you
20 evaluate technologies at a site. It's not a simple
21 process. There are many variables, and it's important
22 to look at them holistically because misinformation can
23 be gathered by looking at them in narrow sense. In
24 addition, we are very firmly committed and I think we're
25 making great progress in rapidly employing those better

1 performing technologies.

2 Just to make it clear the type of technologies
3 I'm going to be referring to and talking about are
4 subsurface investigation. That is one part of a very
5 complicated process in characterizing a site. What we
6 believe in terms of technology it is the issue which has
7 caused the most concern and confusion, understanding how
8 we understand what's not visible on the surface.

9 Let me give you in a nutshell our view of what
10 the state of the technology is today. First,
11 historically, in the past mag and flag has been the
12 predominant method used to characterize sites. By mag
13 and flag, I mean using a sensor that is handheld, hooked
14 up to a little earpiece with a qualified person walking
15 through listening to a tone and planting a flag slightly
16 offset from where they think an ordnance item may be.
17 The concern with that technology is not the use of
18 magnetometers, and, in fact, the term mag and flag
19 refers to actions that don't involve magnetometers. It
20 can be any sensor.

21 What's available now and being used at a number
22 of sites are what we call digital geophysics techniques.
23 They have been demonstrated. They are available
24 commercially. Many of them have been developed in the
25 past by DOD support in the R&D world and I'll touch upon

1 why we think these are the preferred approaches when
2 they are practical to be used given the site condition.

3 There are two basic classes of reasons I'll go
4 through why we think we need to go this way. One has to
5 do with performance and cost, and one has to do with how
6 you actually manage a site, both from our perspective
7 and from the regulatory view.

8 Finally, there are developing technologies. It
9 is a very rapidly changing field. Investments in this
10 field really only started the last five years, and it is
11 going to continue to rapidly change. So it will be a
12 challenge to all of us to establish lines of
13 communication so that what is real in emerging
14 technology we all recognize and differentiate what from
15 what is a hoped to be performance.

16 First, to take the black magic out of it, why
17 we believe digital geophysics techniques are robust and
18 have shown improvements. There is a couple points
19 listed here.

20 First of all, it's important to recognize that
21 we are still using the same sensors that were used for
22 mag and flag. It is not a radical change in the sensors
23 to characterize the site. There are improvements which
24 are important and modest modifications to them, but the
25 real difference is how you configure these sensors, the

1 fact that you digitally record them, the fact that we
2 can exploit major advances in the general area of
3 georeferencing, that is, things such as differential GPS
4 technologies which are radically different in the
5 performance and cost now than five years ago. Two to
6 three orders of magnitude changes in cost. And,
7 finally, by collecting data this way, you open a whole
8 variety of tools for processing the data that are not
9 available otherwise.

10 A couple caveats, though, and let me say
11 explicitly, Jim referenced some past work at JPG 3 and
12 JPG 4, and I think these caveats apply directly to
13 trying to make comparisons between those two numbers.
14 It's comparing apples and oranges. And we can talk
15 offline about that, but you also have to be cautious
16 comparing performances.

17 First off, you cannot define the technology's
18 performance without specifying both the probability of
19 detection, that is, what's the probability it will find
20 a UXO that's there, and at the same time defining what
21 we call the false alarm rate. That is, how much items
22 which have no inherent risk in them, pieces of scrap,
23 are being identified as UXO. Without defining both
24 parameters, the performance of the technology is
25 completely ill-defined. I can find everything in a site

1 with a stick, but just saying there is an item at every
2 foot, obviously, that's not an effective way to
3 characterize a site.

4 These other characteristics which Jim mentioned
5 are very important, and you really need to look at each
6 site and see how it differs or similar to other sites to
7 make an assessment on the technology that will be
8 applicable.

9 Now, let me just briefly go through why we
10 believe digital geophysics, when it's applicable, that
11 is, when you can practically bring it to a site, is the
12 preferred approach. This consensus view of the
13 community has derived from many studies. I put a few of
14 them in the backup and I'm not going to go through any
15 of them explicitly, but these studies that we funded
16 under the program I direct for Miss Goodman, as well as
17 the Jefferson Proving Ground studies the Army did, as
18 well as numerous work done by the Corps of Engineers in
19 Huntsville.

20 The consensus of all these studies is that
21 digital geophysics has a higher probability of detection
22 and a lower false alarm, that this statement is true for
23 all types of targets. Doesn't mean we can detect all
24 targets, but the increase in performance is true for all
25 targets. In addition, you go a known spatial coverage.

1 MR. LOWRY: Can you tell us what PD is on this
2 chart? And FAR?

3 MR. MARQUSEE: I'm sorry. I will use way too
4 many acronyms and I apologize for that.

5 PD is a probability of detection. That is, the
6 probability that you will actually know UXO that is
7 there is there. The other items listed there I think
8 are pretty self-evident, but they are very crucial ones.

9 Knowing where you have covered a piece of
10 property is not a simple matter. If you're surveying a
11 10,000 acre piece of property, which is not uncommon,
12 having a record of actually every square foot that
13 you've covered and having confidence in that is a very
14 difficult task made very simple by doing modern digital
15 geophysical mapping, and that gives a great confidence
16 in what we know.

17 In addition, if you look at the cost of the
18 whole project, in the end, it will be a lower cost.

19 Why don't we skip this slide for a time.

20 The second class of issues is the issue of
21 management and regulatory. There are a number of
22 nonquantitative advantages for using digital geophysics
23 at our sites, ones that are advantages to the Department
24 of Defense as well as regulatory organizations like
25 yourself. One, you end up with a permanent record. You

1 end up with an explicit ability to review past actions
2 and understand why they were taken. An issue which to
3 date we have not had to face at many sites because the
4 actions taken are relatively recent, but future site
5 review based on changing land use or changing land
6 conditions, i.e., erosion or issues like that, this
7 allows you at a very cost effective and quick way to go
8 back and assess those.

9 In addition, I want to spend a minute going
10 through a concept which I don't think is well
11 recognized, how digital geophysics allows one to do a
12 much more systematic risk management, and if I could
13 have the next chart, please, and I will take a minute to
14 explain this chart because I know it can be somewhat
15 confusing.

16 What we've got plotted here is the probability
17 of detection. That is what's the probability of finding
18 one versus that false alarm rate. That is, how many
19 times did I dig a hole which did not lead to a risk
20 reduction.

21 Those two curves on there are the performance
22 of a proposed technology given two different cleanup
23 objectives. Let me first just look at objective A.
24 Let's say you want to clean this site up for a certain
25 type of UXO to a certain depth and certain classes of

1 them. You can operate your technology all along that
2 curve. The decision on what probability of detection to
3 have versus false alarm is not a fixed parameter.
4 That's a decision that involves tradeoffs of cost,
5 schedule and risk. It's a decision which should not be
6 made by technology vendors, technology developers,
7 technology implementers. It is information we should
8 provide for the greater stakeholders to use to make that
9 decision.

10 So that when someone tells you the performance
11 of a technology has an 80-percent probability of finding
12 a UXO and 30 frag items per acre and you say that's
13 better than a technology which has a 75 percent, you
14 actually do not know that because that technology may
15 lie along a different curve and the vendor has just
16 tried to guess where your optimal point is. He needs
17 ideally to provide you all the information so that you
18 can select and we can select the optimal way to operate
19 a technology.

20 Furthermore, often there are very significant
21 impacts on the performance of technology by significant,
22 but not major, changes in your cleanup of objective. By
23 saying I know historically, for example, that there are
24 very little high risk 20 millimeter objects in my site
25 and a decision may be made that you are willing to live

1 with that risk, can allow you to operate a technology
2 where all the sudden your probability of detection of
3 the more risky items grows significantly. So it's
4 important to both look at the technology's performance
5 as we go forward and its interaction with the cleanup
6 objectives.

7 Just two quick charts. This is an extreme
8 example of an old approach to characterizing a site. If
9 I could see the next chart, please. The more modern way
10 to do it is to go out and actually map a site. It can
11 be done by a vehicle-driven system. It can also be done
12 by handheld system. It's not restricted to
13 vehicle-driven system. You then have a full map of a
14 site which is available for processing offline and for
15 risk management decisions.

16 Let me turn quickly in the next minute and just
17 address the final of the three topics. That is, what's
18 our R&D process and what we are doing. The department
19 invests significant resources right now in developing
20 UXO technologies. Like all technology developments, we
21 have investments in what we call the science and
22 technology area which is what we do in the program I
23 manage called SERDP. We also have investments in what
24 we call the demonstration validation area. It's
25 important when you look at emerging technologies and

1 innovative technologies that are proposed to use at a
2 site, as Colonel Tompkins mentioned, that they be
3 technologies that have passed through that demonstration
4 validation wicket, that they have proved effective on
5 realistic operational conditions.

6 We and I personally spend a lot of time
7 promoting and working on science and technology that are
8 at earlier stages. Those technologies hold great
9 promise, but they may not be ready or mature enough to
10 use operationally, and I think we need to make sure that
11 the greater community understands which technology falls
12 into which category.

13 Could I just have one more chart, please? Just
14 to give you a sense of where we think things are going,
15 as I said at the beginning, technology is changing very
16 rapidly. We see in the near term significant advances
17 exploiting new electromagnetic induction sensors --
18 that's EMI up there -- that allow us to do much better
19 performance, and near term is two years. We're talking
20 near term. We see significant advances for being able
21 to survey very large areas rapidly so that you can
22 screen if the areas are open terrain.

23 Longer term we're looking at optimizing things,
24 developing airborne capabilities for rougher terrain and
25 other items I won't go through in detail now, but we

1 have a balanced program at the Department of Defense
2 both to push out technologies now that can help our
3 cleanups across the country and to invest in
4 technologies that will have an order of magnitude
5 improvement performance but may take a decade until they
6 actually are in fieldable condition. And I'll be around
7 today to answer specific questions.

8 MR. VEST: Thank you very much.

9 MR. LOWRY: Thank you. If we could have you
10 remain here for a few minutes, maybe we have a few
11 follow-up questions, bearing in mind the agenda. The
12 first thing that comes to my mind is we talked a lot
13 about technology today and R&D and so forth. Does the
14 United States have any plans, let's say we approve a
15 site now and we accept a certain risk given the
16 limitations of technology but we want to develop a site,
17 there's the economy, a locality wants to do something.
18 Does the Army, the United States have any plans to come
19 back and use that advanced technology at a later date?
20 How would that work?

21 MR. VEST: Actually, I think there is probably
22 two parts to that answer. One is that to the best of my
23 knowledge in history there has never been a case where a
24 piece of UXO ordnance or whatever has been discovered
25 anywhere that the United States military did not go back

1 and take care of it. And I'm not sure everybody really
2 realizes that that is the case.

3 There has been much discussion to the issue
4 that you've spoken to, and there is not at this moment a
5 definitive answer to that question. Understandably,
6 there is an interest on the part of the Department of
7 Defense to not have indefinite open ends on things. On
8 the other hand, there is arguably a good point in having
9 some ability to come back under certain circumstances.
10 And I suspect that that will once again be dealt with
11 over time, largely in a site specific way. At the
12 moment there is really no definitive answer to the
13 second question.

14 MR. LOWRY: Mr. Vest, you mentioned local
15 standards, and the question I have on that is, do you
16 think it's appropriate that city of Centerville be the
17 entity which decides how much risk its citizens should
18 face which may be an order of magnitude different from
19 the city of Outerville, for example? Is that what you
20 meant to say?

21 MR. VEST: Well, once again, I'm coming from
22 the perspective of being a planner and have done
23 planning, at least many years ago when I was on the
24 civilian side, under state enabling laws, and, of
25 course, I think it's fair to say throughout the United

1 States what we're really talking about is a police power
2 executed through delegation from the state by the local
3 community to determine the appropriate use of land.

4 I think that once again all these things are
5 certainly arguable depending on where you stand, but it
6 would seem that in most cases that indeed that should be
7 part of that planning process and that indeed that under
8 those delegations of authorities there would be a
9 responsibility there.

10 I don't think it's quite that simple, however.
11 I think that obviously that there is many stakeholders
12 in this process, there are many sources of information,
13 but I think ultimately there is a great deal of
14 deference must be paid to what local communities, local
15 governments, their authorities under enabling laws to do
16 land use planning.

17 MR. LOWRY: Let me follow up a little bit. My
18 understanding of a process is that the local land use
19 people say we want houses here, a factory here and
20 shopping center here and we want it to be safe. How
21 does that relate to the local political body saying, and
22 we'll take a certain degree of risk in putting our
23 houses here and so forth? Is that their job or is their
24 jobs to say we want houses here and we want you to clean
25 it so it will be safe enough for people to live there?

1 Do you see the quandary?

2 MR. VEST: Of course. Of course. Undoubtedly,
3 it will vary from state to state. It obviously depends
4 a lot, in my view, in how the various stakeholders
5 actually want to participate in that process.

6 I think I have to look at it from our
7 perspective, what is our role. Our role is that we have
8 had at one time the land in question. We have managed
9 in accordance with the standards that we have and our
10 practices, and we really have an obligation to provide
11 the kinds of information that we have spoken about here,
12 both Colonel Tompkins and Dr. Marqusee, into that
13 process.

14 It is really not, I think in this big scheme of
15 things, our call. It is somebody else's call, but it's
16 not necessarily our position to determine who makes that
17 call.

18 MR. LOWRY: Okay. Putting on my chemical
19 regulator hat, I could come to you and say, an
20 acceptable level risk in the State of California is that
21 one person out of a million is going to get cancer in 30
22 years? Can I come to you and say, I want no more than
23 one person to be the victim of an explosion picking up a
24 piece of unexploded ordnance, one in a million over 30
25 years. Do you do modeling like that? Is that the risk

1 we're talking about?

2 MR. VEST: Let me ask Dan to comment on that.

3 (Laughter.)

4 MR. LOWRY: Well, it's not an easy question.

5 MR. VEST: Yeah, I say in the sense, how would
6 you say that that would be dealt with? How would you
7 say we have dealt with risk in that sense?

8 COLONEL TOMPKINS: We do not find that
9 acceptable. If you have a risk of someone getting
10 injured, if you're going to accept a chance of someone
11 getting injured in the future over 30 years, I hope
12 you're around for the 30 years to be that one person.
13 That is, if there is that great a risk, that is one of
14 my problems with this whole process. We're not talking
15 about one guy in 30 years. He may step on it tomorrow
16 morning, and it's a real risk.

17 We are developing processes that will allow us
18 to say that under our risk-based standards, but we
19 would -- at this point we would not use those standards.
20 If there is a risk, we don't care if the guy's going to
21 step on it in 30 years or tomorrow, it's going to be an
22 immediate event to him or her, and that's not
23 acceptable.

24 MR. VEST: I think if I might, a footnote
25 there, historically explosive safety in the military has

1 been what we would call, you base things on the
2 probability of one. In other words, it's going to
3 happen. So everything has been dealt with in an
4 incredibly safe way. And that has produced, at least
5 for our internal use, some fairly definitive, how should
6 I say, specifications, prescriptive type standards.

7 On the other hand, which Colonel Tompkins was
8 alluding to, is we are in the process of looking at
9 adjusting that in terms of adopting a current thinking
10 in terms of risk assessment and risk management.

11 MR. LOWRY: What do you say to me or somebody
12 in my shoes or community members, we'll do anything you
13 want us to do as long as you can guarantee in Colonel
14 Tompkins' view there is no risk somebody will step on
15 something and blow up. You said we don't accept the
16 idea that's going to happen in 30 years because we're
17 going to have to talk to her mother. How do you do that
18 when we ask you for no risk that someone is going to
19 injured?

20 COLONEL TOMPKINS: Well, actually from 1970 to
21 about 1994 we said that the land must be rendered
22 innocuous or it couldn't be totally opened to the public
23 and no land was released to the public. The BRAC laws
24 changed that and we did not have that luxury, so to
25 speak.

1 We'll never say that there is no risk, but we
2 would like to say that if the cleanup is done to our
3 standards on the type of munitions that we have
4 approved, you're not facing a significant risk. If you
5 were, we would restrict the land.

6 MR. LOWRY: All right. Following up on that,
7 how do you define significant risk?

8 COLONEL TOMPKINS: We do not have a numeric
9 definition of significant risk.

10 MR. LOWRY: Okay. Let me ask you one question
11 and then move on the agenda and give you a chance to say
12 anything else you want.

13 What's your experience in terms of transferring
14 ordnance sites numerically? How many have you done
15 across the country for residential, industrial and so
16 forth use under the BRAC and other polices?

17 MR. VEST: I don't think any of us have the
18 figure. We can provide that.

19 MR. LOWRY: All right. Ballpark, are you aware
20 of any that we have of residential transfers to date?
21 Or are we on the cutting edge here? Can we go visit a
22 housing development in Kentucky, for example?

23 MR. Vest: Well, there are clearly places that
24 have become residential that did have UXO's. As I say,
25 we can give you the figures on the actual transfers.

1 Occasionally we do deal with UXO that has been
2 discovered in residential neighborhoods. In fact, one
3 of the most infamous is in Washington, D. C., area, and
4 that's old stuff. It goes back a long time.

5 MR. LOWRY: What would be helpful to me would
6 be to look at your analysis and Colonel Tompkins' group
7 where that's happened, where you've looked at this and
8 applied whatever standards you have to convert something
9 where you know there is a UXO, and the United States has
10 said this process is adequate and people can live there
11 in housing. That would be very helpful for us.

12 MR. VEST: We'll provide that and anything else
13 you'd like to follow up on.

14 MR. LOWRY: Jim, Stan, Paul, Bonnie? Thank
15 you, gentlemen.

16 MR. VEST: And thank you very much for having
17 us.

18 MR. LOWRY: What I would really like to do is
19 move immediately to Rob Wilcox, the program manager at
20 U. S. Army Engineering Support Center, Huntsville
21 Ordnance and Explosives Mandatory Center of Expertise.
22 I'm sure there is an acronym for that. And perhaps when
23 we get to about 10:30 we'll try to take a short break.

24 MR. WILCOX: Good morning. Colonel Spear sends
25 his regrets. He truly wished to be here, but he was

1 called to Washington. His loss is my gain, however. It
2 is an honor to be here as California once again takes a
3 position of environmental leadership. Establishing
4 Rules like this is commendable. I thank you for this
5 opportunity, and I hope I can help, even if it's just a
6 little.

7 The word community, the way I'm using it, is in
8 the largest context possible. It's the community
9 stakeholders, includes landowners, local citizens, local
10 officials, the fellowship of regulators, federal
11 agencies, and all agencies and persons having interests
12 affected by ordnance contamination on the sites.

13 My experience on this program has been that
14 success is rarely the result of dealing with a single
15 issue by a single agency. Success is won if the
16 community can come together to resolve these community
17 problems. No single level of government is equipped to
18 resolve this type of long-term problem unilaterally. I
19 would hope that the standards to be developed would
20 foster inter-governmental cooperation and meaningful
21 stakeholder participation. It is imperative that the
22 focus on this entire picture of community needs caused
23 by the ordnance hazard is not just a single facet of the
24 hazard and that as much protection is given to the
25 community as consistent with reasonable use.

1 Formerly used military and BRAC lands may be a
2 real blessing to communities in which they exist, but as
3 with most opportunities, there are responsibilities that
4 go along with it.

5 Contamination at abandoned sites sounds like
6 the very soul of CERCLA. However, it is both an
7 environmental issue resulting from contamination of an
8 abandoned site and a safety issue. While the potential
9 for environmental contamination must be addressed, we
10 know the major concern is instantaneous tissue
11 destruction resulting in injury or death.
12 Unfortunately, there are no thresholds of concentration
13 of ordnance below which this is not a possibility.

14 We have little to fear from ordnance
15 contamination finding our drinking water, but we should
16 be very concerned about our children finding the
17 ordnance. Whether is a CERCLA, CERCLA-like or some
18 other vague term, ordnance contamination merits all of
19 the stakeholder involvement, all of the regulator
20 coordination, all of the preparedness planning
21 envisioned in the national contingency plan. The
22 response agency should discuss it regularly as part of
23 their planning preparedness operations.

24 CERCLA has a strong preference for treatment
25 alternatives that eliminate the problem. While it is

1 also true of safety response, it is far less often that
2 minimization is the only response. The more
3 comprehensive response is normally required. Those
4 familiar with hazardous waste problems understand that
5 behavior is far less important than it is concerning a
6 safety issue. Site access is also less important. An
7 exposed person may never have been on a site when we're
8 dealing with hazardous waste contamination. Natural
9 exposure pathways may take the contaminant to the
10 person. Behavior is also not important.

11 These contaminants affect your life
12 requirements, drink, eating, breathing, washing.
13 Compromises in these areas are not likely. On the other
14 hand, we have the capacity to live with safety hazards.
15 As a society we have learned to adjust risky behaviors
16 and to accept personal responsibility.

17 This is an event tree. They are used to study
18 accidents for the sake of prevention. We should look at
19 this two ways to get maximum use out of this diagram.
20 First we have to look at it theoretically. If we assume
21 we can eliminate the presence of ordnance, we can
22 eliminate the possibility of an accident. If we can
23 prevent access, we can eliminate the possibility of an
24 accident. If we can assure appropriate behavior while
25 on site, we eliminate the possibility of an accident.

1 This demonstrates that each of these represents a valid
2 strategy that can be used to prevent ordnance accidents.

3 Second, we need to look at this practically.
4 We must understand that we cannot remove 100 percent of
5 the ordnance. We cannot eliminate all access to these
6 sites and we cannot assure appropriate behavior all the
7 time. However, each strategy, if applied, will help
8 prevent an accident. Relying on a single strategy is
9 not the way to achieve the most protection.

10 Understanding the operation and the use of a
11 site is essential to understanding the risk. It
12 provides a context and affords insight necessary to
13 create an effective risk management strategy. Effective
14 risk management has three major elements. We try to
15 minimize the risk. This has to be accomplished within
16 the context of mission accomplishment because risky
17 operations may be necessary to meet mission requirements
18 and therefore may not be reduced to zero.

19 We then must manage the residual risk. That is
20 which cannot be eliminated. Protective measures can
21 usually be applied to mitigate the consequences of an
22 event. After that, we must monitor the effectiveness of
23 the situation.

24 Are people following the rules? Has something
25 happened to change the assessment of the hazards? After

1 time passes with all the hypotheses, assumptions and
2 projections used in planning, do they remain valid?
3 Does some development change the requirements?

4 I'm going to use a few illustrations here to
5 make this clear. By the way, none of this is intended
6 to compare levels of risk with these examples. I am
7 simply trying to compare the methods used to minimize
8 the overall hazards.

9 Automobile safety. We are continuing to try to
10 build better, more crash resistant automobiles.
11 Highways are efficient and safer than ever with limited
12 access and improved visibility. We license drivers.
13 But in case we do have an accident, we try to minimize
14 the effects of that accident. We have seatbelts,
15 airbags, crumple zones and the ever famous insurance.

16 We monitor the effectiveness. Automobile
17 inspection is necessary in most states except the south,
18 driver retesting, traffic code enforcement. It is
19 important to note that all of these good efforts are
20 wasted if behavior deteriorates below a certain level.
21 Drunk drivers kill in the safest cars on the safest
22 roads while wearing seatbelts.

23 A more down to earth example, semi truck tires
24 have as much as 125 pounds and bead or rim failures can
25 easily generate the explosive force of a half pound

1 equivalent of TNT. The split rims may be thrown
2 significant distance and are most significant danger to
3 technicians working on them and anyone in proximity to
4 the operation.

5 Substantial cages are used to catch the flying
6 rims. This cage is approximately four and a half feet
7 tall and the bars are two and a half inches in diameter.

8 The next thing they do is they reduce the
9 residual risk. They use an extra long inflation hose
10 with a locking chuck and pressure valve and gauge 10
11 feet away from the chuck. This allows the technician to
12 take cover behind a wall with steel and concrete pylons
13 affording shelter from any potential blast.

14 All the systems dealing with safety require
15 oversight. Here the shop supervisor is reminding the
16 technician about safety procedures.

17 Any community that has a site contaminated with
18 ordnance deserves a complete risk management strategy.
19 Anything less is less than they deserve.

20 To apply risk management, we must understand
21 the community at risk. In fact, most safety issues have
22 little meaning until they are attached to a mission. Is
23 the risk worth taking? Truck drivers can be dangerous,
24 but they allow us to move goods over the highways.
25 Where there is ordnance contamination, site use is

1 critical. How do they intend to use the site? Are
2 risky behaviors involved? What is the regulatory and
3 institutional framework associated with the site? Can
4 control be maintained? Are reasonable alternatives
5 available that are less risky? If commercial or
6 industrial land uses could be substituted for
7 residential, the result would be more manageable

8 Ordnance response can be organized in the same
9 three main elements of risk management. We minimize the
10 risk with physical removal of the ordnance that can be
11 located. We manage the residual with land use controls.
12 Sometimes we call those institution controls or I really
13 prefer to call those local initiatives. We monitor the
14 effectiveness with recurring review as we just completed
15 at the site in San Diego, the Tierra Santa community.

16 Any less consideration is less than the
17 community deserves. The current review at Tierra Santa
18 is an experience that I hope DTSC can draw on in making
19 regulatory decision. This project represents the
20 hallmark of community involvement and cooperation
21 between levels of government to create a new protective
22 guidance and plans to keep the community safe over time.

23 We must keep our eyes on the unknowns.
24 Planning for safety requires that we understand the
25 technical limitations of our equipment and our people.

1 They are the best, but they are human. The community
2 view of things will change. Site dynamics will change
3 or become clearer after time. Assumptions are called
4 assumptions because they are our best guess.
5 Commitments are kept by humans and subject to error.
6 Unanticipated things always happen. People in
7 communities change over time. Residual risk management
8 and monitoring the effectiveness are the only tools that
9 deal with these issues. In spite of the fact that many
10 individuals tend to ridicule institution controls, these
11 tools and recurring review are essential to the
12 long-term safety and security of the community. I worry
13 that standards that focus on concentrations of UXO will
14 further divert the attention away from the only real
15 long-term protection these communities have.

16 High tech on real sites is a real pleasure. We
17 generally do use it when we can, and this site shows
18 three different technologies that we have tried to use.
19 One of the problems we have here is these are all
20 demonstrations taking place on a lawn.

21 This is a site that is much more typical. You
22 will note that the pine trees in this slide have a
23 monetary value and the landowner would not care for us
24 to cut them down to search for ordnance. In most cases
25 frequently site conditions are the arbiter of the

1 equipment used. In most cases the stakeholders must
2 determine if the community can accept the consequences
3 of removal and sometimes even investigation. Dig and
4 sift leaves a virtual strip mine and some studies will
5 require evacuation while intrusive studies are done.

6 In the beginning we thought that we were
7 recovering about 75 percent of all munitions from impact
8 areas. That remained constant for a time because there
9 were only about three of us in Huntsville that were
10 working on the program and we had precious little time
11 to consider the technicalities. After a while, more
12 people were assigned and we got some great results at
13 test sites. The effort at JPG shook our confidence a
14 little, but we recovered and basically returned to where
15 we started.

16 As the program grew, we acquired a little more
17 sophistication, became apparent that removal efficiency
18 is very site dependent. We now claim removal efficiency
19 of between 70 and 90 percent. Not too far from where we
20 started, but we have a lot better reasons for the claim.

21 The point of this slide is in our wildest
22 speculation we never got closer than 96 percent
23 recovery. If we allow ourselves to assume a 96 percent
24 recovery rate were true today, it would mean that for
25 every thousand rounds that were recovered 40 are left on

1 site. If we assume 98 percent, there are 20 left behind
2 out of 1,000. This flight of fancy should tell you that
3 no standard that allows any acceptable concentration of
4 ordnance is sufficient to protect site users.

5 In summary, we need to understand community
6 needs resulting in ordnance hazards so that a
7 comprehensive solution can be found. We need to remove
8 as much ordnance as is reasonable. We should use
9 community approved, the best, technology. We should
10 encourage, support and monitor local initiatives,
11 notice, permit and or subdivision requirements and
12 zoning. Education and planning support should be given
13 freely. The current reviews provide a long-term safety
14 net and reenergize the community to stay vigilant. I'm
15 afraid concentration based standards that aren't
16 attainable may be counterproductive, destroying our
17 ability to work together in trust.

18 Focus on technology to the exclusion of local
19 initiatives tends to reduce the ability to create
20 long-term safety and security for the affected
21 communities. Attainable concentration based standards
22 will not be protective. Process based standards that
23 require comprehensive response through risk management
24 and all appropriate NCP framework principles may be
25 protective until the magic is perfected. Thank you.

1 MR. LOWRY: Thank you. A few follow-up
2 questions. How would you define acceptable risk in the
3 context of what you've been talking about?

4 MR. WILCOX: Acceptable risk is it has to be
5 acceptable to the community. We need to understand the
6 risk and be able to live within it and understand it.
7 It's like most sites would have certain risks associated
8 with them even if they had no ordnance on them. They
9 need to be managed responsibly.

10 MR. LOWRY: Going back to your slide just
11 before the picture of the building, there were a list of
12 what if's in terms of right after your automobile
13 example. Are we confident --

14 Actually, can you try to find that slide?

15 MR. WILCOX: Number 11.

16 MR. LOWRY: I gleaned from your discussion the
17 answer to question number one is no. Can we interpret
18 the ordnance risk in view of the future situation? We
19 don't really know the future. Are we 100 percent sure
20 about assumption? Probably not. Will commitments be
21 kept 100 percent? We've got people around just like
22 some people drive drunk. Probably not. Do unexpected
23 events happen? Certainly. Do community needs change
24 over time? The answer would certainly be yes.

25 What does that say about what I have to do in

1 terms of talking about acceptable risk?

2 MR. WILCOX: What that means is the
3 institutional controls and the other true elements of
4 risk management are as important as removing the
5 ordnance in the first place. I don't mean that we need
6 to leave ordnance behind that we can find. We need to
7 get rid of all of it, but the other aspects of risk
8 management are at least as important as removal of the
9 ordnance.

10 MR. LOWRY: They are as important. Would you
11 agree that they are as subject to failure as in any
12 other realm of human condition?

13 MR. WILCOX: I think they are subject to
14 failure, and that's why we have the third element, which
15 is we have to monitor it. It must be monitored as well.

16 MR. LOWRY: How would you recommend ensuring
17 that we do the monitoring?

18 MR. WILCOX: The monitoring needs to be similar
19 to what was done at the Tierra Santa project, a
20 recurring review no less often than five years. The
21 period of time needs to be a design consideration on the
22 project.

23 MR. LOWRY: Who should do that monitoring?

24 MR. WILCOX: The response agency is responsible
25 for that.

1 MR. LOWRY: That being? Response agency? I
2 don't understand that term.

3 MR. WILCOX: The Department of Defense. Of
4 course, it's a community effort.

5 MR. LOWRY: Are you confident that with the
6 technology that we have now and the removal efficiencies
7 which you had on your chart that we can transfer
8 property for residential use and have this acceptable
9 risk met?

10 MR. WILCOX: I think the acceptable risk is a
11 determination of not just the removal rate. It's also
12 do they have adequate controls in place, and it's going
13 to be very difficult to say everywhere yes, but if the
14 removal is the maximum, all we can do is get rid of it,
15 and if they have a credible management plan to deal with
16 the residual risk, yes.

17 MR. LOWRY: Are there DOD regs that say what
18 ought to be in that management risk plan?

19 MR. WILCOX: No, sir. Not that I'm aware of.

20 MR. LOWRY: Is that going to be in the new
21 Range Rule which we haven't yet seen, do you know?

22 MR. WILCOX: I don't know, sir.

23 MR. LOWRY: Thank you, sir. Nothing else to
24 ask at this point. What I'd like to do, the clock up
25 there reads 10:33. At 10:43 I'm going to be sitting

1 back here calling the meeting back to order. Thank you.

2 (Recess taken.)

3 MR. LOWRY: Our next speaker is Mr. Dick
4 Wright. Mr. Wright is the interim director of the Army
5 Environmental Policy Institute. Joining him for a
6 three-part panel or at least sitting together at the
7 same desk, Mr. James Woolford, director of the Federal
8 Facilities Restoration and Reuse Office at the United
9 States EPA, and Mr. Lenny Siegel, Director of Center for
10 Public Environmental Oversight, and Mr. Wright has told
11 me that he's flying to if not nicer climes, different
12 climes immediately after his presentation. So he may
13 have to get up kind of in the middle of our most
14 friendly questions.

15 So, Mr. Wright, the program is yours. If
16 you're hoping that someone is going to manage your power
17 point presentation. Okay.

18 MR. WRIGHT: Thank you very much, Mr. Lowry,
19 and on behalf of the Army and my boss, Mr. Ray Fatts,
20 who is the deputy assistant secretary, certainly for the
21 Army for safety occupational health I appreciate the
22 opportunity to come and talk to the panel and talk in
23 front of the audience.

24 I put up on here just some points for me to
25 remember in my discussion rather than a formal slide to

1 sit down and talk about everything and how it's done,
2 but I started off with in my thought process of what are
3 we after, and we is the big we, not the little we, the
4 little we being the Army, I think, in this, but what is
5 we, the community, the community, as Rob talked about,
6 the community of regulators and community of public.

7 What exactly are we after in this? I think a
8 workshop is a great way to start off on that path, not
9 having answers, but find out what all the questions are
10 and who may be able bring some of those answers to the
11 desk as you get further down through your process.

12 Are we just after protection of the public?
13 And I looked at that as being all the public or specific
14 public. We talk about residential. Are we concerned
15 about the residents that use the property or the people
16 that live over the next hill? As Jim and I were just
17 having a discussion, if seatbelts were good, then how
18 come all buses don't have seatbelts for taking a look at
19 a protective measure. So there are different measures
20 of protection based on different aspects of what the
21 problems are.

22 Using property, saving money, and I put up
23 there saving money in two aspects, saving money to the
24 Army and saving money to the taxpayer. The Army has
25 always looked at this issue is the appropriate amount of

1 money needs to be applied to the problem to solve the
2 problem. There is a limited source of money in both
3 environmental accounts and the total amount of money the
4 Army has to buy all of their defense needs. But don't
5 look at that as saying the Army doesn't want to put more
6 money into a project. It's just once the money is gone
7 on a project, there is no more until Congress
8 appropriates it through some other means.

9 Saving money for the taxpayers. We're all
10 taxpayers and ultimately this is not just like an Exxon
11 cleanup where Exxon would spill oil and ultimately you'd
12 pay at the pump to handle the cleanup. We're all going
13 to pay at the pump through our taxes, both state,
14 federal and local.

15 And, of course, the measure absolute safety, I
16 think that comes out your in your first questions that
17 you laid out, what is clean enough, how safe is safe, is
18 there any measure of risk that the community is willing
19 to accept. And certainly you hold the audience and
20 again you hold the audience not only on that side of the
21 podium, but behind me in the people in the audience and
22 their comments.

23 I didn't want to spend a lot of time talking
24 about the Army process. There is a process and it's
25 outlined in both the DOD standard that Colonel Tompkins

1 mentioned, and on the web page for Huntsville there is
2 more than a thousand pages of documents on how the plans
3 are put together, how the technologies are selected, how
4 the land is cleaned, how safety plans are put into
5 effect, et cetera. So to sit down and talk about the
6 process in a brief period of time would really
7 overburden the system.

8 But the Army generally cleans to what's a
9 reasonably anticipated end use, be the end use
10 residential or be the end use wildlife preserve. And it
11 may include additional measures beyond just the cleanup.
12 We talked about those. Land use controls, local
13 ordinances, such as what was established in Marina with
14 regards to some property being transferred off Fort Ord.

15 Follow-up actions, emergency response actions.
16 Mr. Vest was very clear. DOD has never lost ownership
17 of a piece of ordnance. So we do not abandon it as
18 such. If it's found again, it's picked up and it's
19 normally picked up by an Army or other service EOD team
20 that's responsible for that local area. It doesn't mean
21 they'll go back and clean up again, but it does mean
22 that if a piece of ordnance is found at some later time
23 someone will respond to it on an emergency basis and
24 take care of that action.

25 We talk about the removal process being site

1 specific, and that covers a wide range. The type of
2 ordnance that's there, the density of the ordnance, the
3 technology that's most suited to solve it, the
4 residential end use that's determined to be appropriate.
5 But it is a site specific action. And, of course, the
6 principal concern on this is always finding the
7 unexploded ordnance or the ordnance and explosive
8 material.

9 We use a slight difference. An unexploded
10 ordnance was something that was fired down range and
11 didn't go off, and a piece of ordnance or explosive may
12 be something that was buried, hazardous in itself, but
13 not quite as hazardous as a piece of ordnance that's
14 been fired down range.

15 As I mentioned, Huntsville is one of the web
16 pages to go to be able to find a large amount of
17 information on specifics of how the Army does their
18 process.

19 What I want to take time to talk about a little
20 bit is the SMART approach. We're all stuck with
21 acronyms, and this certainly is one I didn't pick,
22 although I have heard it called the not so smart
23 approach. But the SMART approach stands for Strategic
24 Management Analysis Requirements and Technology approach
25 to Fort Ord. And I would say that it's a significant

1 advancement from all the partners which includes you and
2 your agency, the Environmental Protection Agency and the
3 Army in three different levels, headquarters Army,
4 training dock and command at Fort Monroe and the local
5 installation.

6 We've been meeting since last August. We meet
7 both in closed and open sessions, and there has been a
8 significant investment of time taking a look at the
9 issues that you're just opening the door on today. And
10 I would hope that in your deliberations that Stan and
11 the other people that have worked with us down there use
12 this as a model to continue on. It really has been
13 building a dialogue where we can go in and focus on
14 solutions rather than on what issues are. Everyone has
15 problems, but what needs to be rectified to either get
16 the land transferred safely or not transfer it. That
17 may be the decision.

18 So it's really helped to develop both mutual
19 understanding and expectation so everybody on every side
20 of table understands which each person's position is.

21 We've used focused public involvement and I use
22 the word focus because we try not to wander. We bring
23 in experts to testify to talk in front of the panel much
24 as it is here and we open questions up to audience to
25 talk about each one of the presentations, as well as at

1 the end of the meeting allow time for input. But we try
2 and stay on the subject which the SMART team is
3 addressing, which is cleanup of unexploded ordnance. So
4 we don't talk about process or application of RCRA or
5 CERCLA or something else. We talk strictly with how do
6 we remove the ordnance. What's the best way to do it.

7 And, of course, what our biggest thing was we
8 needed to find a language to get along with. Dan Ward,
9 who works for you, his expertise is in hazardous toxic
10 and radiologic waste cleanup. OE and UXO are not that.
11 They do represent some unique safety issues, but it
12 doesn't mean that you have to start off from scratch.
13 There are a lot of common methods that we're trying to
14 resolve, but the idea is to get down to language that we
15 can talk about together.

16 I think in conclusion, I'd just like to say
17 that site specific, when we say site specific doesn't
18 mean we have to start over again at every site. There
19 really does need to be a foundation, a set of standards
20 that we work from, and then we adapt that situation and
21 those standards to whatever the process may be.

22 There are standards. We've talked about are
23 there standards. There are standards. Colonel
24 Tompkins mentioned Congress in 1928 vested that
25 authority in the Department of Defense Explosive Safety

1 Board, 10 USC 172. It has the force of law as
2 identified by the Attorney General and those are the
3 standards that are in effect and those are the standards
4 the property has been cleaned to. For the four years I
5 was the board chairman, I probably signed 150 documents
6 regarding land transferred and cleanup plans.

7 I hope this process adds value. It needs not
8 only regulatory oversight, but it needs to have value to
9 the process and how do we in fact improve safety, at the
10 same time meeting the other goals of transferring
11 property.

12 And, of course, there are not answers to all
13 questions and you posed some very good ones, but some of
14 the questions that get posed along the way may not be
15 appropriate. All's I'd ask is caution as you look at
16 that, that some questions don't have answers and that
17 doesn't necessarily mean that's a bad thing.

18 With that, that concludes my remarks. Thank
19 you.

20 MR. LOWRY: All right. Thank you. Let me get
21 right into questions with you in case you have to grab
22 your flight at Sacramento International Airport.

23 We had discussion earlier and you mentioned at
24 the beginning of your talk about monitoring after the
25 fact. I detect from my discussions with people in the

1 community and so forth that they would be a lot more
2 comfortable if the Army were to say, And when there is a
3 new technology out there, we're going to come back and
4 we're going to see if we can find out anything that's
5 missed and so forth. And I detect a reluctance from the
6 United States to say that's what they're going to do.

7 Am I interpreting that properly? Has the Army
8 or the U. S. given any thought to doing something like
9 that?

10 MR. WRIGHT: There are places in the Range Rule
11 where recurring reviews occur, and certainly that's an
12 additional point that would be made at a recurring
13 review. I believe the Range Rule talks about the first
14 review being three years after transfer and then follows
15 up at a seven year/12 year process. It's a little bit
16 faster than CERCLA.

17 It's not dismissed and it is in the flow chart,
18 but the position has always been that the land would be
19 cleared to a reasonably anticipated end use regardless
20 of the technology applied. So I can't say yes and I
21 can't say no, but I can say during the review process,
22 and I think Mr. Wilcox stated that the Range Rule has it
23 that the Army comes back, but the Army doesn't come back
24 as the Lone Ranger in that if it's an Army response.
25 There is regulatory involvement from both the state and

1 federal to make sure that in fact the remedy was
2 appropriate.

3 The question would be, though, is why would I
4 come back with a new technology if I've noted no
5 problems. In other words, if the property was cleared
6 to a certain end used and in the intervening time before
7 new technology was designed there had been no problems
8 noted and the property has been used for that end use,
9 why would I come back with a new technology just to say
10 I've used the new technology?

11 MR. LOWRY: Let me give you what I think is the
12 reason people that might pose, and that is, given the
13 technology which we had in the year 2000, we, the
14 community, were willing to accept a particular level of
15 risk. We now know there is a better technology. We'd
16 like to lower our risk. Why isn't that a good enough
17 answer or question?

18 MR. WRIGHT: I'm not saying it isn't good
19 enough. I would just tell you that it has not been
20 pushed on any side to say that that would happen.

21 MR. LOWRY: Can you say what's involved by
22 regulation or practice in the first three-year review
23 and the seven-year review, that sort of process?

24 MR. WRIGHT: The Range Rule covers it more
25 specifically, but Tierra Santa was the model that the

1 Army would use on that. I believe Jim has participated
2 in the reviews of that. For the record, I'll get you
3 that information, but I know the state has that.

4 MR. LOWRY: Okay. Just for, I guess, the
5 record, in terms of the standards that you noted, would
6 you agree or disagree that for residential use, for
7 example, it says clear to 10 feet, are there specific
8 prescriptions within federal regulations about how
9 exactly you clear to 10 feet?

10 MR. WRIGHT: The Department of Defense
11 standards say clear to a site specific depth or 10 feet
12 being a default depth. In most cases the early
13 clearances that came through came through at a default
14 depth. It was easier to determine. And there is
15 clearly, I guess, less risk in making a decision on
16 that.

17 Site specific, there is a document signed by
18 the chairman of the board that shows up on their web
19 page that talks about the specifics that go into an
20 explosive safety site submission. It's also in a Corps
21 of Engineer document that's on their web page and it
22 talks about all the types of documents that go into it.

23 There is not a document that talks about how
24 the board decides and how the board reviews the process,
25 but I can tell you, and we've talked about this in the

1 past, is I signed at least 150 of these while I was the
2 chairman and my comfort level was that the property's
3 end use and the clearance procedures, if followed in the
4 field, and again Colonel Tompkins mentioned the one
5 thing the board had not done that the board is now
6 doing, but if those procedures were followed that the
7 property was safe for the intended end use. Otherwise,
8 I wouldn't have signed those documents.

9 MR. LOWRY: What did you determine was an
10 acceptable level of risk when you were signing those
11 documents? What was the calculus you went through on
12 that?

13 MR. WRIGHT: I never used a number of like 10
14 to the minus six or one UXO per hundred acres, but it
15 was taking a look at all the aspects of the plan. You
16 know, you heard talked about 70 percent or 90 percent or
17 some range above or below that. But what you end up
18 with is you don't end up with an equal distribution of
19 ordnance on the property. It's not only horizontal, but
20 it's vertical. So, again, it's a complete combination
21 of that.

22 My expectations were in reviewing the plan that
23 the ordnance was found and removed or, if in the process
24 of end use later, there were procedures established to
25 go back and respond and remove any other ordnance found.

1 Now, did that mean that the risk was zero? No. Did it
2 mean the risk was one? No. It meant that the level of
3 risk was comfortable where I would sign the
4 documentation. I know that is not a help.

5 MR. LOWRY: Well, just understanding that
6 process is enough. Can you compare the work that you
7 and we are doing in Fort Ord on the SMART team with the
8 requirements in the Range Rule?

9 MR. WRIGHT: I would tell you that what we're
10 doing is really working far in excess of what the Range
11 Rule probably will require. I mean we really have
12 taken, and I think as you know, we based it off issue
13 that we know occurred and we use as the starting formula
14 a letter that you issued to the Army last year which
15 turned out to be a really good foundation to try and
16 address what the specifics issues were.

17 But we really have taken it far beyond what the
18 Range Rule does, and I'm not sure that this would be
19 needed to be done at every site. I would tell you that
20 I always looked at the work there as being not only
21 specific to Fort Ord, but what could all of us take away
22 from this and how we would do the next site.

23 Part of the problem always is making sure that
24 people are educated to the same level. And, you know,
25 there have always been comments made is DOD or the Army

1 is the only one that knows how to take care of this
2 because they are the only ones that understands UXO.
3 That's true and false. It's true they may be the only
4 ones that really understand what the issue is, or their
5 contractors, but it's false that they are the only ones
6 that should be involved in the decisionmaking process.
7 It does require the regulatory community as well as the
8 community to try and make sure that the issues are
9 addressed and they are informed on the full ranges of
10 responses and measures. I mean, I would just tell you
11 that I think that Fort Ord has been good for all of us.

12 MR. LOWRY: What are your plans? What are the
13 Army's plans for implementing elsewhere the SMART team
14 recommendations at Fort Ord?

15 MR. WRIGHT: We've already started to take a
16 look at Fort McClellan. There is two different issues.
17 I guess probably best to address them here. There is
18 BRAC installations where land has been identified by
19 Congress to be transferred to the community for reuse
20 and there are FUDS where the property in fact has been
21 returned, and in many cases returned in the early '50's
22 or '60's or '70's at the time no one really -- did not
23 seem to be an issue. UXO was not even thought about.
24 It was just transfer the property.

25 On a BRAC concept or a place where land is

1 still within the Army hands, an approach like SMART will
2 be used at Fort McClellan and, in fact, it's always been
3 implemented at this same level, brought in senior level.
4 Senator Shelby was there, excuse me, Senator Sessions
5 was there at the first meeting to make sure that the
6 entire range of community, political as well as the
7 general public are involved.

8 MR. LOWRY: For those of us with limited
9 geographical information, we're not talking McClellan
10 Air Force Base.

11 MR. WRIGHT: Fort McClellan is in LA, lower
12 Alabama.

13 (Laughter.)

14 MR. LOWRY: Someone mentioned a rocket that
15 needed 1250 feet of clearance or exclusion zone and so
16 forth. Of the more typical stuff that we find, what's
17 the level of damage that can be inflicted? What's the
18 clearance range we need on that?

19 MR. WRIGHT: I'm not sure there is a typical
20 damage range. When Colonel Tompkins showed you the
21 slides, unfortunately, they were not in the same
22 perspective. The bottom bomb was about eight feet long
23 and the top item was about two inches.

24 Most of the ordnance that you find at Army
25 installations is artillery size or less, a 155 artillery

1 round is 1800 feet frag range, a 40 millimeter grenade
2 is 200 feet. So the range is pretty broad.

3 And you know, there has been discussions, and
4 we've had them at Fort Ord, regarding buffer zones and
5 engineering controls to be allowed work to occur while
6 the public was around. And the Army has a number of
7 those that are used -- we talked about them in our last
8 meeting -- that allows that distance to be lessened
9 while activities go on. But, in general, you're going
10 to move things out to 1250 feet in the absence of
11 knowing any other -- any specifics of the site.

12 MR. LOWRY: All right. And that's because
13 these things will kill you if you're closer and happen
14 to be in the wrong place at the wrong time.

15 MR. WRIGHT: Yes.

16 MR. LOWRY: The accident at Tierra Santa in the
17 early '80's, what type of ammunition or ordnance were we
18 dealing with there? Anybody know?

19 MR. WRIGHT: I think it was mortar rounds, but
20 I'm not sure. 2.36 rockets. 37 millimeters. Okay.
21 Sorry. Small.

22 MR. LOWRY: How big is 37 millimeters?

23 MR. WRIGHT: 37 millimeters in diameter. So
24 it's a little more than half an inch and about two and a
25 half inches long, three inches long.

1 MR. LOWRY: Anything else you want to say
2 before we bid you adieu?

3 MR. WRIGHT: No. I guess the last comment is I
4 would tell you don't misinterpret what occurred at
5 Tierra Santa to today, the practices that go on today.
6 Technology may be marginally better, but the process and
7 procedures are significantly better as well as the
8 quality checks, the response actions in the event that
9 something is found afterwards. So what occurred in 1983
10 was certainly probably destined to occur at someplace,
11 but the procedures that are in effect today should
12 preclude that from happening in future.

13 MR. LOWRY: Let me ask you a couple more
14 questions. I'm sorry. I get the impression that for
15 what's acceptable as a level of risk is an intuitive
16 subjective analysis. You have objective facts and then
17 subjectively someone is, in a decisionmaking mode, is
18 comfortable with that level of risk. Inasmuch as we're
19 not, we, when I mean that, the United States, at a
20 minimum is not willing to go a numerically based
21 calculation of one in 10,000 or something. Is that
22 accurate?

23 MR. WRIGHT: I think that's very accurate. I
24 mean, there are a lot of numbers that go in helping make
25 the decision, but the final decision is really based on

1 a sense of the numbers and where they leave you, not a
2 I've come up with a definitive number to say this is
3 safe and this is not safe.

4 MR. LOWRY: How do you think the responsibility
5 should be shared for who's comfortable? Who needs to be
6 comfortable in that matrix?

7 MR. WRIGHT: I think the first line covered who
8 needs to be comfortable. The people that are going to
9 use the property, the agencies that are responsible to
10 establish standards and review the standards in all
11 aspects of general health and the environment, as well
12 as the Army who has to be comfortable with a degree of
13 liability left to them. Because ultimately, although a
14 person may die on the site, the Army is liable for the
15 actions that would be occur. So it would be liable for
16 any of the penalties that would have to do.

17 Certainly the penalties are not as significant
18 as the injury or death, but there are penalties. So
19 it's in everyone's interest to figure out what the right
20 answer is.

21 MR. LOWRY: Thanks very much for coming. Stick
22 around as long as you like.

23 Let's move to Jim Woolford, Director, Federal
24 Facilities Restoration Reuse Office at US EPA.

25 MR. WOOLFORD: Thank you and good morning. I'd

1 like to thank you and Stan for inviting me out here to
2 speak at this public workshop. I'd also like to thank
3 the audience for investing their time in coming out in
4 such large numbers. I think it's indicative of the
5 concern that's out there in the community. I also
6 apologize for not having an overhead like my
7 predecessors have, but I have been working on the Range
8 Rule back in D.C. and that's been taking up a good
9 amount of my time. But I did have copies of my
10 presentation made and they were available.

11 First off, I'd like to note that there is
12 probably too much information and experience that can be
13 adequately conveyed and understood in such a short time.
14 I think you just touched the tip of the iceberg here and
15 I'd like to offer the assistance of my office back in
16 D.C., my colleagues that sit in Region IX out in San
17 Francisco to work with you as you proceed. We have
18 gained a lot of experience over the years and I think we
19 can convey that. There is no way in 15 or 20 minutes to
20 convey to you what we've learned.

21 I'd like to briefly touch on what is going on
22 nationally and then provide some personal observations
23 from my five years of working on this issue at the
24 federal level and then some suggestions on how you can
25 proceed.

1 One of the things we do bring to the table, you
2 had raised the question earlier, are there any other
3 facilities around the country that are turning ranges
4 into residential use, and the answer is yes. I'm very
5 familiar with the situation going on in Fort Ritchie in
6 Maryland, and there they are actually cleaning up the
7 facility to a depth of four feet, not 10 feet, and you
8 may wonder why that is given the DDESB standard at 10
9 feet. Well, it's simple bedrock there at four feet, and
10 there is no need to go any deeper and that is the type
11 of site specific information that will affect decisions.

12 Just very briefly, at the federal level there
13 has been promulgated the Military Munitions Rule which
14 was in 1997 which was required by the Federal Facilities
15 Compliance Act and it deals basically with regulation of
16 military munitions under the Resource Conservation and
17 Recovery Act, or RCRA. In that we postponed final
18 action. Only when munitions become a statutory solid
19 waste will close the transfer ranges, and that has led
20 to the work on the DOD Range Rule which is currently in
21 process.

22 In the Range Rule, which you had a question for
23 Mr. Wright on, they originally proposed it in '97 and
24 they proposed a CERCLA-like process. It did not propose
25 cleanup standards per se. It did lay out a process for

1 addressing ranges.

2 DOD took comments through December of '97.
3 They told me that they received over 800 comments, and
4 they are now going through sort of a revision and final
5 inter-agency review of the Range Rule and they are
6 targeting publishing it in August of 2000, which is a
7 major challenge to meet that goal.

8 There are also DOD regulations which Colonel
9 Tompkins, Dick Wright and others have referred to. I'm
10 not going to go into those, but I do want to provide
11 with you some quick observations on how I think
12 California may want to proceed.

13 One of my first observations and
14 recommendations is to use what you have. There are
15 existing regulatory mechanisms and statutes out there
16 that can be used. At the federal level we have the RCRA
17 statute, we have the Superfund statute and there are
18 other statutes that we can use like the Safe Drinking
19 Water Act, which we've actually used at an active range,
20 Massachusetts Military Reservation, where the activities
21 from the range are impacting a sole source aquifer for
22 Cape Cod and potentially affecting the drinking water
23 supply for over a half a million people.

24 My second observation, you referred to
25 initially that UXO is somehow unique. It is unique, but

1 it doesn't necessitate reinventing the process. And you
2 talk about chemical contamination. I would just ask you
3 to consider radioactive waste and plutonium in
4 particular. The Department of Energy is addressing
5 plutonium. They have done so at Lawrence Livermore here
6 in California. They are doing so around the country.
7 They are doing it within existing federal regulatory
8 framework. They can do so by promulgating their own
9 internal regulations, and we're able to bridge those
10 internal regulations, those internal regulations within
11 the CERCLA process.

12 The second thing, and my colleagues from DOE
13 touched on this somewhat, but I wanted to just highlight
14 these for you, and these are things that I have heard
15 from DOD. The first is a concern about putting
16 explosive safety personnel in harm's way. Within EPA we
17 call this the crazy regulator, that somehow we will
18 require explosive safety personnel to go out and handle
19 munitions that they should not handle. It is a concern
20 we hear frequently. So I think where perception is
21 reality, I think it's something you have to consider as
22 well.

23 The other thing considers response calls. I've
24 heard estimates from 20 billion to 500 billion. If we
25 have to spend that much money, it's going to affect

1 military readiness, and that somehow regulation will
2 affect readiness by reaching to the active and inactive
3 ranges and there would be somehow we will end up
4 shutting down training. The most cited example is
5 Massachusetts Military Reservation, which I would submit
6 is fairly unique.

7 So, consequently, among the lessons we have
8 learned and what we've been talking to the Department of
9 Defense about is in addressing ranges and UXO's, you
10 need the minimize the changes to existing processes.
11 One reason for doing that, as we've seen as we've been
12 dealing with the Range Rule as DOD revised it, is that
13 you are going to have impacts on other parts of your
14 state program, your private party sites, perhaps your
15 litigation. So you have to be very careful how you
16 craft any guidance or regulations.

17 Another observation is that you need to
18 integrate UXO response into the cleanup process itself.
19 I think you're doing that at Fort Ord, but if you
20 separated it out, what happens is sort of that you end
21 up going back to sites repeatedly and you have to
22 address the chemical contamination and other
23 contamination as opposed to the ordnance contamination.

24 You have to consider the scope of what you're
25 thinking of regulating. As I say, not all ranges are

1 equal. Closed ranges are different than transferred
2 ranges, and the federal statute sets up different
3 regulatory mechanisms for that. The formerly utilized
4 defense sites are different than the sites DOD still
5 owns.

6 You have to decide whether you're going to
7 touch on the active and inactive ranges. Our approach
8 from EPA is that we're concerned about inactive and
9 active ranges to the extent that there may be offsite
10 human health and environmental impacts, but otherwise we
11 really feel within our discretion that we're not going
12 to regulate or go in and require DOD to perform site
13 assessments at all these facilities around the country.

14 You also have to consider addressing nonrange
15 facilities around the country, around California. Ammo
16 plants, recyclers, depots. My staff just came from a
17 depot that is not a range, but yet it is littered with
18 unexploded ordnance. So you have to consider that.

19 You have to avoid -- and again I commend the
20 efforts of Fort Ord -- the tyranny of the experts. What
21 I've seen in D.C. is that rather than working in a
22 meaningful, collaborative, cooperative manner, the
23 explosive safety experts are pitted against the
24 environmental experts, and you have to work to integrate
25 those two, and you have to listen to one another. You

1 have to hear what each other is saying.

2 I think what we've done is we've brought
3 together two audiences that have not typically talked
4 and we're engaging in that dialogue and coming to common
5 understanding. I think that because of the nature of
6 unexploded ordnance and what it entails, you need to
7 have enhanced public involvement.

8 My last page of my presentation are just some
9 questions that are almost putting the questions back to
10 you, things that we need to consider. The only thing I
11 would impart upon you is that whatever you do, you
12 need -- what I have seen is that there is not a clear
13 rationale provided for some of the decisions that are
14 being made around the country, and so to the extent that
15 you can help facilitate that dialogue through your
16 efforts here or providing the input, we would be very
17 much interested in those.

18 I'll give you as an example the DDESB standards
19 which talk about clearance to 10 feet for residential,
20 commercial and others is to me somewhat
21 counter-intuitive. When I think of a lot of commercial
22 structures, their footprint and the depth of
23 construction is going to be a lot deeper than 10 feet.
24 And so that's a conversation I think we need to have
25 with the Defense Explosive Safety Board, the DOD folks

1 who have a lot of experience in this area, and come to,
2 I think, a common understanding and approach.

3 With that, I'll close my remarks and be happy
4 to answer any questions that you have.

5 MR. LOWRY: Okay. Thank you very much. What
6 does EPA think, and I think you answered it with respect
7 to your Maryland example, but I take it that EPA
8 believes that we can effectively clean or clear ranges
9 for residential use. Is that a fair statement?

10 MR. WOOLFORD: I think the answer to that is
11 yes, but it's important to note that in the Fort Ritchie
12 example, we're cleaning it for residential use. There
13 will be still institutional controls. There will be
14 notice in the deed to the property owners that this area
15 was once a range. There will be procedures set up that
16 say -- construction support I think is the word that
17 Army is using -- that will provide for construction
18 support for a builder who is going in there. There will
19 an 800 number for them to call for if they find ordnance
20 what to do.

21 You can have a residential use with
22 institutional controls, which may seem
23 counter-intuitive, but we think because there is no 100
24 percent detection technology out there, we think it's
25 necessary to do. It's a matter of being safe and trying

1 to avoid future incidents.

2 MR. LOWRY: Has EPA evaluated whether requiring
3 notice in the deed is going to make the developer unable
4 to develop that property?

5 MR. WOOLFORD: The developer is not happy with
6 that, but we feel -- Dick Wright alluded to the
7 liability of the Army -- that we have a liability
8 concern. I will tell you that I was at another
9 conference a few weeks ago where the folks from Fort
10 Ritchie, and having heard Mr. Wilcox's presentation,
11 they were kind of on the fence, I think, about are we
12 going to have land use control. The developer is
13 pushing for -- he has somewhat gone the political route,
14 gone to Army politicals and said, you know, I don't
15 want, you know, this will encumber my ability to use the
16 property. After hearing Mr. Wilcox, they said we have
17 to have land use controls, and I was happy to hear that.

18 Now, it's going to be debate, but I think it's
19 better to do that than to transfer a piece of property
20 where there could be some danger down the road to
21 someone, maybe two or three hundred years down the road.

22 MR. LOWRY: What's the status of the Fort
23 Ritchie development now?

24 MR. WOOLFORD: They are finalizing the removal
25 that is to happen there, the four-foot depth of

1 clearance which I talked about. They are working on,
2 once that they do that, transferring the property to the
3 developer within the next year.

4 MR. LOWRY: All right.

5 MR. WOOLFORD: That's the latest I know. It
6 could have been progressed. My knowledge is two or
7 three weeks old now.

8 MR. LOWRY: Is that the only example of a
9 transfer of a range to residential use that you're
10 aware?

11 MR. WOOLFORD: That's the only one I'm aware
12 of, but I can't say there have not been others. That's
13 the one, the feeling in Washington, my office has gotten
14 involved in because of the concerns of the developer.

15 MR. LOWRY: I can't tell from your remarks
16 whether you are recommending that we as a state agency
17 promulgate guidance or start a regulatory regulation
18 process, issue our own standards or whatever. Do you
19 have a feeling about that? Do you want to express it?

20 MR. WOOLFORD: I don't know your state
21 Superfund law well enough or any of your other
22 authorities. My advice to you is that within the scope
23 of your existing authorities, try to use those and
24 you'll avoid a lot of pitfalls I think we have in
25 Washington over the last few years.

1 I do think that publishing guidance is very
2 useful because I think it provides a greater certainty
3 to the public and to the development community and
4 actually it gives a target for the military to use.

5 MR. LOWRY: I like the word target in this
6 sense.

7 MR. WOOLFORD: I chose that deliberately.

8 MR. LOWRY: How would EPA feel about if we
9 issued guidance that was more rigid than that which the
10 military has?

11 MR. WOOLFORD: It's certainly within the
12 state's prerogative to do that. I would just say that
13 you have to look at the -- one of the things that's
14 going on in the Range Rule right now is that we're
15 talking to responding to ranges using CERCLA
16 authorities. So you have to look at the CERCLA statute
17 and see how the more rigid state authorities would be
18 handle under 120(a)(4). I'm not an attorney, but your
19 attorneys can tell you that.

20 MR. LOWRY: Thank you very much.

21 Lenny, before you start, I'm going to repeat a
22 joke that I heard yesterday which will explain what I'm
23 going to do now, and that is, I'm subject to three
24 strikes rule, having formerly practiced criminal law.
25 That means if my pager rings three times it means the

1 Governor's office has a question and I have to answer
2 it. So what I would like people to do is stand up and
3 stretch for two or three minutes. I have to make a
4 phone call. I'm very sorry about this. And then we can
5 go back to the regular program.

6 (Recess taken.)

7 MR. LOWRY: Our next speaker is Lenny Siegel.
8 He's the director for the Center for Public and
9 Environmental Oversight. He has a wide range of
10 experience in military base transfers, UXO and
11 representing communities. I've known Lenny through, I
12 think, the Fort Ord process.

13 Welcome, thank you for coming.

14 MR. SIEGEL: Good morning. In my work, it's my
15 job to inform public stakeholders and to attempt to
16 represent them in their concerns about unexploded
17 ordnance and explosive wastes. I sit on a number of
18 committees, federal committees that deal with these
19 issues.

20 I'm extremely pleased that you're holding this
21 workshop today because I think it's extremely important
22 for the State of California and other states to develop
23 comprehensive regulatory frameworks for the management
24 of risks at ordnance and explosive waste sites.

25 The Department of Defense does have some unique

1 expertise in the area of explosive safety, but they do
2 not have a monopoly over risk management expertise, and
3 in fact at times they have a conflict of interest
4 between their core competency missions of training and
5 directly protecting public health and safety at their
6 past and present facilities.

7 In addition, they have a conflict of interest
8 in that every dollar spent on cleaning up ordnance takes
9 away from their principal missions. So it's important
10 that the states not only develop a framework for going
11 to each site to helping to decide what needs to be done,
12 but to let Congress know that more resources need to be
13 put into this effort.

14 Dr. Marqusee earlier talked about the balanced
15 effort at the Department of Defense has for doing
16 research into these new technologies. It is a balanced
17 effort, but it is a very small effort considering the
18 magnitude of the problem.

19 The money being put into the cleanup of
20 unexploded ordnance is also very small given the
21 magnitude of the problem. The defense Science Board
22 Task Force on this issue guessed the national cost could
23 be around 15 billion dollars for cleanup of closed,
24 transferred and transferring ranges. We don't know
25 exactly because there is no separate line item, but we

1 estimate somewhere around 100 to 150 million dollars a
2 year is being spent on that cleanup. It will take a
3 long time to accomplish the job at that rate. So it's
4 important that regulations be in place to ensure that
5 Congress recognizes the level of risk that's out there
6 to the public.

7 In my written statement, I've highlighted five
8 points of many issues that could be raised with regard
9 to unexploded ordnance. The first thing is that
10 whatever the state comes up with as a regulatory
11 framework, address all sites where unexploded ordnance
12 and explosive wastes might be found, whether they be the
13 site of an old train track, a depot or an active range.
14 It doesn't mean that you have to go and get involved and
15 regulate everything that goes on in an active range, but
16 as Mr. Woolford said, where what happens there affects
17 the public, it affects our health, then it's important
18 that the state regulators be there. So it's important
19 that the framework address all kinds of facilities,
20 including active and inactive ranges.

21 Secondly, for closed, transferred and
22 transferring ranges, it's important that the state
23 assert its authority. These are the kinds of facilities
24 that are to be covered by the Range Rule and are also
25 being addressed currently by this agreement in principle

1 between the Department of Defense and US EPA.

2 That agreement in principle does not assert
3 state authority under its hazardous waste laws to
4 regulate and to be one of the ultimate authorities in
5 the cleanup, decisionmaking for the cleanup of those
6 sites. My fear is that the Range Rule will be short of
7 the defense/state memorandum of agreement and again the
8 leave ultimate authority to the Department of Defense.

9 The Range Rule is undergoing a 90-day review at
10 the U. S. Office of Management and the Budget. I urge
11 the State of California and other states to go to that
12 office and say, wait a minute, we have these
13 authorities. If you don't provide in the Range Rule for
14 our role in dispute resolution, then it's quite likely
15 that, and unwillingly perhaps, that we'll be tied up in
16 court for years, as has happened earlier with hazardous
17 waste, in determining what role states really have in
18 protecting their citizens. So I urge you to get
19 involved in those discussions while you have a chance.

20 The third point is whichever regulatory
21 authority exists, it's important to have a good risk
22 management methodology. I participate on the Range Rule
23 Risk Methodology Partnering Team. This is the document
24 which hopefully will be released to the public for
25 review shortly. It is a good start in allowing the

1 military, its regulators and the public to work together
2 to evaluate risks at ranges, and this is specifically
3 written for closed, transferred and transferring ranges.
4 It can be applied elsewhere.

5 It has some shortcomings. First, it's too
6 long; secondly, it's too complicated; and, three, it
7 relies too heavily on prescriptive algorithms for
8 combining factors.

9 MR. LOWRY: What the heck does that mean?

10 MR. SIEGEL: Well, basically, if you say the
11 risk for culture risks is five and for ecological risks
12 is three and some other risk and you combine them and
13 you end up with a four and you bring it to your next
14 level. And nobody really fully understands why the
15 numbers are what they are.

16 The methodology as drafted identifies all the
17 important parameters that need to be evaluated, but we
18 feel it should be evaluated as is now done in the
19 cleanup process under professional judgment. The final
20 chart for evaluating alternatives is based on a national
21 contingency plan. There are two ratings, one for
22 ordnance explosive waste, one for what they call other
23 constituents, or toxic substances essentially. That is
24 a very useful tool for weighing alternatives.

25 So, again, this is a good start, but it's

1 important that the state, the public weigh in for
2 something that's workable and transparent so that we can
3 all use it together.

4 Whatever the range risk methodology ends up to
5 be or the UXO risk methodology ends up to be, I think it
6 has to follow a hierarchy of responses. This is
7 somewhat similar to what Mr. Wilcox said. Start with
8 clearance, and what you can't clear, you deal with with
9 land use controls. What you can't deal with with land
10 use controls, you try to deal with with access controls.
11 And finally you deal with education. Try to let the
12 receptors know, the kids, don't pick up the grenade.

13 Dr. Marqusee did an excellent job of laying out
14 some of the key issues for the technological
15 requirements. I would add I think it's important to
16 have what would we call independent or foggie sensors.
17 The biggest challenge in improving the technology right
18 now is discrimination, determining what is UXO and what
19 is frag or old nails. We waste a lot of money and a lot
20 time at these ranges, as well as destroying the
21 environment, picking up every single piece of metal. To
22 the extent we can improve our ability to discriminate
23 between nails and bombs, we can do a better job. If you
24 have sensors that not only look for metal, but look for
25 smell of ordnance or the shape, that will help do a

1 better job in that regard.

2 You asked a question earlier about the
3 possibility of returning to a site when better
4 technologies are available. I think that's essential.
5 Right now we do end up limiting the use on sites because
6 we don't feel that it's safe to use them for certain
7 purposes.

8 The proposed Range Rule, as I read it, does
9 allow for that. That is in conflict with the general
10 Department of Defense policy of not coming back to do
11 additional cleanup for a change of use. Now, that
12 doesn't make it automatic, but the option is there in
13 the proposed Range Rule, and the defense Science Board
14 Task Force also made that same recommendation for a
15 two-phased cleanup. Sometimes what you have to do is
16 keep people out, clear up the stuff on the surface while
17 you're working on the technologies and then you come
18 back later when you've got a better technology. I think
19 that is an excellent idea and endorse it.

20 Secondly, land use controls the idea of land
21 use controls, as far as I'm concerned, is to keep people
22 from coming into physical or visual contact with
23 unexploded ordnance, and that includes things which
24 might be exposed due to erosion or geophysical processes
25 like freeze/thaw which is a big issue in other states in

1 the United States.

2 Land use controls are by no means undefeatable,
3 and that's why it's important to have a layer of
4 responsibilities. The state and federal environmental
5 regulators, the military, local government and the
6 public all have a role in trying to make sure that
7 people do not come into contact with ordnance.

8 I would say that I would not rely upon a zoning
9 category such as residential or industrial to be the
10 basis of that. Someone should look and see whether or
11 not -- like I go in my backyard and I dig a hole in the
12 ground and plant a tree and sometimes I hit metal.
13 Well, residential doesn't mean you aren't going to do
14 that, but you might do that on an industrial site as
15 well. So you look at the particular pathways of
16 exposure rather than the zoning category.

17 Land use controls work in two ways. One is the
18 kind of recurring view that Mr. Wilcox referred to.
19 When you're talking about maintaining signs and fences,
20 you don't talk about every three years or every five
21 years. You probably need somebody going around
22 regularly to make sure people aren't going where they
23 aren't supposed to go.

24 MR. LOWRY: How do we put that into a plan?

25 MR. SIEGEL: In whatever contract establishes

1 the responsibility for enforcing institutional controls,
2 a particular group is given the responsibility for
3 patrolling the perimeter of a facility. If it turned
4 over a park, you know, National Park Service or local
5 park, the park rangers might have that responsibility.
6 In some cases, it might be the responsibility. But you
7 assign responsibilities for regularly going around,
8 checking off that the fences are still there, that the
9 signs are still readable.

10 MR. LOWRY: Should that be in the record of
11 decision?

12 MR. SIEGEL: The record of decision should
13 refer to the risk management plan. It shouldn't
14 necessarily include all the details. I just received --
15 the Kawalawa Commission in Hawaii is developing a risk
16 management plan along the same lines, trying to develop
17 very specific rules for how you have those kinds of
18 protections. That includes both land use controls and
19 access controls, which aren't exactly the same thing.

20 Also, you need trigger mechanisms. We have 800
21 numbers you can call if you're laying a utility line to
22 figure out whether you should excavate on the site.
23 Those should apply to unexploded ordnance. Somebody who
24 is going to dig a hole in the ground as part of a
25 construction program calls that number, gets access to a

1 GIS number which tells them don't dig there or call up
2 the Army if you're going to dig there. Other things are
3 triggered by the actual action themselves.

4 Access controls, we just mentioned signs and
5 fences. I prefer patrols. There is an island off
6 Massachusetts which is an old range, and they say there
7 is no public access because there is a sign there that
8 says don't go on the island. Well, boaters go there all
9 the time. You need somebody to keep them off there.
10 You can't just have signs and fences in most cases.

11 Access controls, this is an area where the
12 public has an important role because they know what
13 works. When I visited Camp Bonneville in the State of
14 Washington, an oldtimer said, yeah, a barb wire fence
15 looks good to you, but all you have to do is cut down a
16 tree, falls over the fence and there's no more fence. I
17 didn't know that. I'm a city guy. You need the locals
18 to give input about what's going to work, as you need
19 local input in terms of what kinds of education is going
20 to work best.

21 Are the kids going to look at computer games or
22 comic books, what they believe, what they see on TV to
23 tell them to keep off, don't touch this stuff, don't
24 pick it up? A large number of the incidents which
25 involve people being hurt by UXO, maybe even all of

1 them, involve people deliberately disturbing the
2 ordnance. So education, while not the primary
3 response -- clearance is the primary response -- can be
4 very important in keeping people from getting hurt even
5 when they do come into contact with UXO.

6 The final point in my written remarks is that
7 UXO cleanup should be integrated with the cleanup and
8 control of toxic substances on the range. Ordnance is
9 made up of toxic chemicals. When it blows up, it
10 releases toxic chemicals, heavy metals into the
11 environment. When it corrodes, it releases them into
12 the environment. Where we've looked for RDX, royal
13 demolition explosives, on ranges, we've been finding it.
14 This is the issue not only at the Massachusetts Military
15 Reservation, but in Viecces. It's the issue when you
16 actually go to clean up and you say should we blow this
17 up on site or should we cover it when we blow it?

18 These are issues, the release of the toxic
19 substances, that, as the Range Rule risk methodology
20 says, needs to be integrated into the cleanup. And this
21 is an area, of course, where the state environmental
22 regulators have a great deal of expertise.

23 I want to conclude by anticipating your
24 question on risk levels because when the Range Rule risk
25 methodology partnering team first began, the Army

1 contractor came up to us with a formula with lots of
2 Greek letters representing variables for measuring risk.
3 And most of us who were not with the Department of
4 Defense rejected that out of hand for two major reasons.

5 One is, in looking at the variables, we
6 determined it would be impossible to come up with
7 numbers to represent them until the project was long
8 finished, and so it wouldn't really provide much
9 guidance for making decisions at the beginning of the
10 process. And, secondly, we didn't believe that a
11 particular threshold of risk, one in a million, one in
12 10 million, is the way to go. The problem is once
13 somebody gets hurt, unlike with TCE or petroleum, you
14 know what caused it. Looking backwards, you do have a
15 risk level viewpoint.

16 What I've suggested is that instead at each
17 site, whether or not you just put up a sign or you clear
18 to 10 feet or you lay dirt on top or whatever you do,
19 you're taking an action. That action is characterized
20 by risk reduction and cost. When you weigh those
21 alternatives using methodologies such as this one, what
22 you actually need to do is weigh the risk reduction per
23 dollar for each alternative.

24 MR. LOWRY: But how do you quantify that or
25 qualify it?

1 MR. SIEGEL: Well, you can measure the fact
2 that you're keeping people from coming into contact with
3 something. You can measure the fact that you've -- how
4 much of the ordnance you think you've reduced. It's a
5 lot easier to quantify the risk reduction than it is the
6 absolute level of risk.

7 MR. LOWRY: But don't you have to, if you say
8 we want 24-hour patrols on this property or weekly
9 patrols at a \$100,000 a year, don't you have to say we
10 think that two fewer kids are going to pick up a piece
11 of ordnance and blow themselves up? If you go down that
12 road, aren't you then going to your risk based numerical
13 analysis?

14 MR. SIEGEL: What it comes down to is that at
15 some point when you're spending money on a response,
16 whether it be clearance or access controls or patrols,
17 you figure out spending more money on that action isn't
18 going to reduce risk any more. It's the asymptote. At
19 some point you aren't getting anything more unbang for
20 the buck.

21 So that what you need to do is figure out at
22 what point you're no longer effectively addressing risk
23 and you're just spending money, and that's basically
24 when you stop. There is no magic answer. There is
25 still a lot of judgment that's involved, but I think

1 it's easier to take that approach than to come up with a
2 one in a million or one in 10 million kind of number.

3 MR. LOWRY: Okay. You talked about the Range
4 Rule and so forth. What should be in the Range Rule, in
5 your opinion, to protect the state's role which you're
6 advocating?

7 MR. SIEGEL: I advocate -- well, I would prefer
8 that the state have ultimate decisionmaking authority.
9 I don't expect that in a federal rule. So I would like
10 something that follows the model of the defense/state
11 memorandum of agreement which provides for dual ultimate
12 authority between the Governor and the political
13 appointee and the Pentagon.

14 In most cases there will be a lot of agreement
15 about what needs to be done. A lot of people within the
16 military are working hard to do this better, but there
17 are some cases that we run up against in California and
18 elsewhere where there is a difference. Somebody says I
19 don't have the money. Like Scotty in Star Trek. I
20 can't do it, Captain, and you need somebody to represent
21 the public to say, yes, you can. So you engage in a tug
22 of war.

23 But only with that kind of dual authority will
24 you avoid the kind of lawsuits that Colorado has had to
25 use to try to force the federal government to clean up

1 federal facilities within its territory.

2 MR. LOWRY: Are you one of the SMART team
3 members?

4 MR. SIEGEL: No.

5 MR. LOWRY: Can you answer this question? If
6 you can, please do so. Do you think that the SMART team
7 methodology is, as you understand it, is sufficiently
8 protective, or do you understand it well enough to be
9 able to answer the question?

10 MR. SIEGEL: The SMART team, as I understand
11 it, is a process to get people to focus on the actual
12 risk management and less on who has what authority to do
13 what. I was out at the meeting at Fort Ord a month ago
14 where they actually looked at risk management. There
15 was no results yet from that process for me to judge
16 whether it's adequately going to clean the place to make
17 it safe for people to use it as they wish.

18 As a process, I think partnership tends to work
19 well, but the partnership works best when all of the
20 parties that are represented in that process have shared
21 authority. If you go into a partnership where somebody
22 else knows that they can make the decision if you
23 disagree, then you end up cutting back your own
24 negotiating strength.

25 But, again, on a lot of these things there is

1 agreement. I share Dr. Marqusee's analysis of the
2 technology. I agree with Mr. Wilcox on a lot of issues
3 for risk management, but when you get down to the field,
4 you run into a problem of resources. And until we can
5 get a lot more resources devoted to the problem, there
6 are going to be a lot of site specific conflicts.

7 MR. LOWRY: Let me, before I let you go, ask
8 you to follow up on your best professional judgment
9 diminishing marginal utility of expense theory. Is that
10 still a Gestalt type approach? Do you feel that somehow
11 that spending another dollar is just not going to give
12 you a reasonable return or it won't give you any return?
13 How do you put that into what you're doing?

14 MR. SIEGEL: The key thing to understand is
15 that you aren't making evaluating one approach or one
16 technology with that methodology. You are evaluating
17 competing combinations of response, clearance, access
18 controls, use controls and education. And you evaluate
19 each one of those according to that and you pick the one
20 that seems to give you the best response, and that's the
21 key to the thing, that there is no place where we go out
22 and absolutely do nothing. Doing nothing is a response.
23 And so the key thing is to weigh the different
24 responses, and I think you can -- while you can't come
25 up with an absolute number that everybody agrees on,

1 usually you can agree that this looks like it's better
2 than that on a site specific basis.

3 MR. LOWRY: This is probably a question which
4 both of you might want to look at. In the principles
5 document which has been referred to, there is a
6 statement there that some ranges probably cannot be used
7 for particular purposes. As a matter of public policy,
8 how should we and who should we task with figuring out
9 which ranges are good for what purpose?

10 MR. SIEGEL: I believe that is the role of the
11 environmental regulators, state or federal environmental
12 regulators. I believe that local governments can be
13 brought into the planning process, but frequently a
14 local government consists of planners, health
15 department, police, redevelopment agency, and they often
16 have a conflict of interest where it's in their interest
17 to make money on the property as well as protect the
18 public.

19 So the role of the environmental regulator is
20 key, just as with hazardous waste. To me, this is one
21 of the areas where other kinds of waste are very much
22 the same as ordnance explosive wastes.

23 MR. WOOLFORD: As so many things, I'm in
24 agreement with Lenny on this one. The only point I
25 would add to it, I do think it's ultimately the decision

1 of the regulators, but it has to be done in concert with
2 the public and it has to be done with information from
3 the military, the experts in this area. We have to know
4 and understand why they are making that suggestion. We
5 just can't in a vacuum, if someone from the military
6 says that's not safe for residential use, accept that as
7 face value. I think it's incumbent upon regulators to
8 understand why and how they reach that decision.

9 For example, at Jefferson Proving Ground, I
10 think the circumstances there would dictate that it not
11 be released for public access given that it was a test
12 range for so many years and it has probably literally
13 millions of tons of ordnance on it in varying states of
14 decay.

15 That makes a lot of sense, but you need to base
16 it on facts. You got to know your assumptions, and I
17 think simpler is better. Lenny talked about the risk
18 methodology. It's not transparent to the folks who have
19 to understand and accept it, the regulators, the public,
20 you know, all these algorithms. It's ultimately, I
21 think, a decision of the regulators, state or federal,
22 but it has to be made with a lot of input from various
23 parts.

24 MR. SIEGEL: One thing I want to be careful
25 about. Residential use is not necessarily the use which

1 leads to the most exposures. Many forms of recreation
2 could lead to much more exposure of the public to
3 ordnance than residential, which is somewhat of a static
4 use.

5 MR. LOWRY: All right. If there is anybody
6 from the military here that wants to comment on that
7 question, feel free, either now or in writing later.
8 That's all I have at this point for you folks. Thank
9 you, Mr. Wright, who's already left, Mr. Siegel,
10 Mr. Woolford.

11 I'd like to bring up Mr. Jack Norris now,
12 federal operations director for Montgomery Watson, Salt
13 Lake City, Utah.

14 And for those of who are wondering how long
15 we're going to be here. We will take a lunch break at
16 12:30 so that everyone who wants to take advantage of
17 the cafeteria in the building can, and we will proceed
18 with the program in program order after lunch as well.
19 As you can see, we are five speakers behind.

20 Is Dan Miller here? Okay. Do you have to
21 leave at some point? Because we may want to put you in
22 next. Let us know.

23 Mr. Norris, welcome.

24 MR. NORRIS: Thank you. I kind of feel like I
25 am in a different situation than the others that have

1 come before me and I feel somewhat like the story of the
2 young man that was taking a theology course, and at the
3 end of the course every year the professor had had the
4 same final exam which was discuss John the Baptist's
5 baptizing of Christ in the river, and it came to the end
6 of that time and the professor walked in said, It's
7 going to be a closed book test and the test is discuss
8 Christ's sermon on the mount, and at the end everybody
9 walked out shaking their head and took a look at the
10 grades two weeks down later, and there were all these
11 D's and F's except for one A, and they turned around to
12 the young man that had the A and said, How did you do
13 that? He said, Well, I started off the exam by saying,
14 well, I am totally unworthy in addressing Christ's
15 sermon on the mount, but I feel that I can add some
16 value to John the Baptist's baptizing of Christ.

17 So you'll have to excuse my presentation. I'm
18 taking a look at it kind from a slightly different
19 slant. I've been involved in the, I'll say as a
20 contractor doing remediation or removal action for about
21 the last seven years, not necessarily with Montgomery
22 Watson, and if we could have the next slide, as I took a
23 look at it in the standards, what we're looking at here
24 in this process is a continuum, and it's been going on
25 for a long time, and it's multi-dimensioned, and as

1 we're tackling this thing, if I were taking a look at
2 standards, I would be taking a look at the process
3 because the process has got to be embedded not only in
4 the past, but also what's going to happen in the future.

5 As you have already pointed out, and others, we
6 really can't foresee the future and what these land uses
7 are going to be and we already understand in the past
8 and we've had incidences where land has had caveats or
9 something else on it that 10, 15 years later is being
10 used for something else.

11 And so as I take a look at the process itself,
12 and these have already been discussed, Mr. Vest talked
13 about the process and Dan Tompkins has talked about the
14 audit trail and the like, but I'd like to use this as an
15 outline.

16 One of the things I continually see is people
17 looking for the silver bullet, the solution. There
18 isn't one. There isn't one unfortunately in this one,
19 nor is there one in another area we're involved in,
20 that's humanitarian demining.

21 The only process that would guarantee us right
22 now 100 percent solution, reduction of risk, is you haul
23 off all the dirt, and that's not -- that just isn't
24 acceptable both from a cost and environmental, and after
25 all, what are you going to do with it after you've

1 hailed it off. But we can reduce risks, and I think a
2 number of systems that are in place are doing that.

3 But we've got new technologies that I think
4 that are coming in place here that can assist us in
5 taking a look at this time line or this continuum, and
6 one happens to be information management. It's not only
7 on how we're talking about processing the things that
8 Jeff Marqusee was talking about as far as detection, but
9 how we kind of orchestrate and start building the amount
10 of knowledge that we have on the site.

11 And as we go through this process, we'll see
12 that our knowledge of the site continues to change as we
13 go through any activity. So one of the things I would
14 say is I would be looking for is how we embed that
15 information management in that record, in that archive,
16 and is it continuous and homogeneous and is it going to
17 be something that is sustainable 20 or 30 years down the
18 pipe because our information technologies change.

19 10 years ago we were using tapes, now we're
20 starting to take a look at going back to those tapes and
21 we can't even read them any more because we don't have
22 that type of technology.

23 In the implementation of the solution, one of
24 the things I see quite frequently as we start taking a
25 look at, and I being in kind on one of those

1 contractors, is people are looking for faster, better,
2 cheaper and they are also taking a look at it as a
3 commodity rather than really what's a value added and
4 what values can be added to a system of process.

5 The other thing I take a look at is even though
6 we start building these plans in the removal or the
7 implementation, Murphy's law is always there. We always
8 are discovering new things that we didn't anticipate.
9 And quite frequently what happens in this continuum is
10 we get locked into those specific plans and don't want
11 to deviate from it or don't have the system in place,
12 and I look at the government in this, is don't have the
13 timely decision process in place to be able to make
14 those decisions which can propel us along in a solution
15 that doesn't further lock us into a quagmire, the tar
16 baby that we get into.

17 I'm sure we've all been here or been in a
18 process where we finally we take a look around and say,
19 well, how did we get stuck here and usually it was
20 because we didn't have the timeliness in the decision
21 process to permit us get to unstuck.

22 The other part of it is is we're talking about
23 monitoring processes and I think two of them are very
24 important and already are already somewhat
25 institutionalized, and one is in the Range Rule we're

1 already starting to talk about monitoring the activity
2 or the results of the activity two, five, six or
3 whatever down the pipe. The other part is monitoring
4 the activity as we're doing it. I think our information
5 technologies can greatly assist all of us.

6 I would see a process any more where after a
7 day's activity everybody could go to a web page or a
8 website anyplace in the United States who had a valid
9 concern about it and take a look and see what's going on
10 with that project and decisionmakers should be able to
11 use that type of process to get through to the solution.
12 And as we go through that process, you might find out
13 that we discover that the solution we wanted to get to
14 is not reachable at that time and we have to make some
15 adjustments.

16 That gets into the timely feedback, and I'd say
17 that's one of the things from a contractor's standpoint
18 that becomes a frustration as we go along these things,
19 especially when you have large crews on site, is
20 something changes or we get a change come up and it
21 takes a while to get a change implemented. At the same
22 time, we're burning money. And I'm a taxpayer just like
23 everybody else is, and, frankly, the folks on the site
24 want to feel good about doing a good job and a
25 creditable job. They have their integrity at stake and

1 would like to feel good at the end of it also.

2 In that feedback solution, one of the things we
3 see quite frequently is that you don't want to shoot the
4 messenger. We need to have it as open as possible so
5 that we can go ahead and start discussing some of the
6 what if's or the issues or the problems such that we
7 don't feel like, well, it's your fault, you know, get it
8 taken care of. It's a joint solution.

9 Embedded in that audit trail, and I've listed
10 some and I know there are other people more eloquent
11 than I that could ad lib and put a heck of a lot more in
12 here, but I as a manager or even the person that would
13 live in a house that was in one of those formerly used
14 ranges, these are the types of things I'd like to have
15 in that audit trail. And what we're really doing is
16 establishing that audit trail for the future.

17 And then in the technology standpoints, again,
18 there is no silver bullet. Dan kind of referred to
19 snake oil salesmen. That's probably too blatant, but
20 what I do see is quite frequently people want to jump on
21 a solution or a technology for a solution that may be
22 only applicable for one place, and indeed quite
23 frequently we harken back to the JPG results, which are
24 generally in an ideal situation, which were somewhat
25 benevolently time constrained and in which a lot of

1 horsepower went into the analysis part, which you may
2 not have when you're actually on site.

3 MR. LOWRY: Can you tell us what you mean by
4 JPG in this context?

5 MR. NORRIS: Jefferson Proving Ground, the
6 series of four demonstrations that were out there.

7 The other part that Jeff had indicated and, of
8 course, Rob Wilcox showed slides of, and that is all
9 these technologies are really impacted upon by the
10 terrain, the vegetation, the navigation systems, and
11 having to be a user of this gets very difficult to go
12 out to within inches and reacquire that item that was
13 detected through geophysical mapping. Although we are
14 getting better in our land navigation systems and
15 processes, that really still becomes an issue and it's
16 compounded in rough terrain and when you have heavy
17 vegetation.

18 The last one I would say is that record, that
19 homogeneous, continuous record is so important and has
20 got to be embedded in any process because my children
21 are going to be out there sometime in the future using
22 that land which we said was okay for this and 20, 30
23 years down the road is going to be used for something
24 entirely different. And you and I won't be standing
25 around there. But hopefully we'll have those types of

1 record systems where we can go into it and take a look
2 at it and revalidate or reanalyze the geophysical
3 information, the other site information and make a
4 determination, and it's going to be a value judgment
5 probably that, yes, that's okay or, no, we've got to go
6 back in.

7 I appreciate your time. Thank you.

8 MR. LOWRY: Thank you. All right. Thank you
9 very much.

10 MR. NORRIS: I must have gotten an A on that
11 test.

12 MR. LOWRY: You certainly did.

13 All right. It's 10 after. Are any of our
14 prepared speakers under a time crunch that they can't
15 wait until after lunch? Raise your hand now? Scream
16 and yell. All right.

17 Let's go in order then. I think we're up to
18 Art Lenox from the Boeing Company.

19 MR. LENOX: Good morning, good afternoon.
20 Thanks for the opportunity to speak today. My
21 presentation today is going to be a little different
22 from the prior presentations. It's more of an approach
23 from more a private sector company. We found ordnance
24 item and what actions did we take to minimize risks
25 during this project so that we would feel comfortable

1 that we have reduced risks adequately.

2 The facility we're talking about is the Happy
3 Valley facility, and it's located on the our Santa
4 Susana field laboratory which is in Southern California.
5 The Santa Susana field laboratory is about a 3,000-acre
6 site that has been used for the past 50 years for large
7 scale rocket engine testing.

8 The Happy Valley facility is located within
9 Santa Susana. The Happy Valley facility is located
10 within the Santa Susana facility. It's in a remote
11 location on site and hopefully it will show up.

12 (Discussion off the record.)

13 MR. LENOX: I'll just kind of wing it. Maybe
14 we can pass that one. The site is located in Southern
15 California. It borders the LA and Ventura County, and
16 to the east of the facility would be the San Fernando
17 Valley. To the north of us is the Simi Valley.

18 If we can maybe jump that slide to the next
19 one? Ah, there it is. Short and sweet.

20 Okay. The Happy Valley facility is a remote
21 facility, probably didn't get a chance to see it on that
22 previous map, but trust me, it's small. It's about
23 eight and a half acres in size, and it's been used for
24 propellant testing at our facility. It's been used from
25 the '50's up until the early 1990's.

1 Could we go back again to the Happy Valley
2 background? One more. Okay.

3 Essentially at this site what we did, it's not
4 your typical bombing range. It was a site used to
5 develop and test different types of propellents, and the
6 way our scientists would do this work is they would have
7 some 20 to 40 millimeter casings, and they'd fill them
8 with different types of propellant mixtures and then
9 they would test the propellents or they would fire the
10 projectile down an outdoor range and measure the
11 velocities of the propellents to determine propellant
12 characteristics.

13 We also had a closed tunnel facility where we
14 would fire from one end of the tunnel to the other end
15 of the tunnel and have cameras and speed traps to
16 observe the flow path of the projectile, again measure
17 velocities.

18 This is an aerial photo of a portion of the
19 Happy Valley facility. This is pretty much toward the
20 latter part of the stage of the facility where we've
21 completed the geophysical survey. We've removed quite a
22 bit vegetation, but you'll notice it's in a pretty
23 remote area. We have a lot of rock outcrops, pretty
24 shallow soil.

25 You'll notice a small blue pickup truck in the

1 center of the screen. That's where the fixed mounted
2 gun range was, and it fired to the left, which you might
3 be able to make out a denuded area where we have some
4 parallel lines in the soil. That's an area where we
5 excavated and sorted and sifted the soil to make sure
6 there weren't any ordnance items there.

7 The regulatory history behind the Happy Valley
8 project, the Happy Valley facility is considered an area
9 of concern under the RCRA corrective action program, and
10 that's regulated by the Department of Toxic Substances
11 Control.

12 Now, back in 1996 we received approval to
13 initiate a soil investigation program, and as a part of
14 that investigation, we were hiking down in the Happy
15 Valley location and we found some suspect ordnance items
16 which led to us halt the soil sampling activity, and we
17 brought in UXB, who are UXO contractors, to help us
18 prepare a work plan to initiate an ordnance
19 investigation there.

20 We wanted to stop the soil investigation for
21 chemical contaminants because we weren't quite sure if
22 there were more ordnance items and we wanted to ensure
23 the safety of the contractors and area personnel.

24 So the interim measure started back in 1999,
25 and it was completed in the early part of 2000. We're

1 still writing the report right now.

2 The key goals of this interim measure, number
3 one, was to make sure we had the area cleared so we can
4 go in and continue our soil investigation program and
5 also to ensure that it was safe for our employees.

6 The other thing that we were pursuing is to use
7 the best available technology to prevent future land use
8 restrictions. And, Mr. Lowry, that's probably going to
9 make a pretty good target for you. But we had a lot of
10 redundancies built into our program to try to minimize
11 the potential of ever finding ordnance items on our
12 site, and I'll get into some of those details.

13 And the other goal we had was to involve DTSC
14 as much as possible. We had quite a few meetings with
15 Jim Austreng over the phone, some site visits, and we
16 felt it would be prudent to have DTSC involved so they
17 saw the site, they understood what the operations were
18 and had a better feel for overall project and when the
19 report was finally written that DTSC would have a better
20 idea of what the project really entailed.

21 The scope of the project was really broken out
22 into two main sections. The first section was we knew
23 of a high risk where we found some suspect ordnance
24 items, and what we ended up doing is excavating and
25 sorting and sifting the soil in this area down to

1 bedrock, and we had elevated metal contaminants in this
2 area, too. So we excavated it all and we shipped it
3 offsite for disposal.

4 Now, before we shipped the wastes offsite for
5 disposal, we had the contractor certify that the waste
6 was free of ordnance items, and I'll show you the next
7 slide in a second, what that sorting and sifting
8 operation looked like.

9 The next phase once we had this high risk area
10 dealt with, we embarked upon a vegetation removal effort
11 to clear the area so we could do a geophysical survey,
12 and we ended up doing a 100 percent geomapping survey
13 over the entire soil area within Happy Valley.

14 The ultimate goal or scope was to safely
15 dispose of ordnance items. After we did the geophysical
16 survey and excavated the high risk areas, we did
17 identify items and we wanted to make sure we handled
18 them properly.

19 The next figure or photograph on shows the
20 Santa Susana field lab Happy Valley area, and you'll
21 notice the rock outcrops. This is a sorter and sifter
22 device we used at our facility to sift through the soil
23 and debris to make sure there weren't any ordnance items
24 in the debris before it was shipped offsite.

25 The way the project was set up, off to the

1 right off the screen is where we had an excavator
2 digging out debris from a drainage and disposal area to
3 ensure that there weren't any UXO items coming through
4 the process.

5 That would be loaded into a loader that would
6 dump into the sorting and sifting device. The fine
7 grain materials and soils would go off to the right on
8 that longer conveyor belt into the roll off bins for
9 offsite disposal, and the larger items went to the
10 picking belt where you see the two UXO personnel
11 underneath that tarped area. Their role was to watch
12 the items coming out of the process and make sure there
13 weren't any UXO items coming through the process. If
14 they were identified, they would be removed and then
15 managed later.

16 MR. LOWRY: Could you comment a little bit on
17 how you protected the workers while they're digging up
18 the ground?

19 MR. LENOX: The excavator was a -- it had a
20 probably a 50-foot reach to it. So the people that were
21 spotting the excavator were at a distance away from it
22 to help the operator excavate. They weren't in the
23 close proximity to the actual excavation activities.

24 MR. LOWRY: What was your estimate of -- let me
25 state it differently. Did you then have -- had you done

1 an analysis which would leave you comfortable that if
2 your excavator set something off, 50 feet was further
3 than that which it could have any impact?

4 MR. LENOX: The contractor that was working the
5 project looked at the types of materials that we were
6 finding, which were the 20 and 30 and 40 millimeter
7 projectiles, and they based their health and safety plan
8 on the ordnance items that we found and the type of
9 equipment and the mass of the equipment that was being
10 used.

11 MR. LOWRY: Okay. Thanks.

12 MR. LENOX: We also had the health and safety
13 plan reviewed and approved by the DTSC industrial
14 hygienist.

15 Some of the details of the project, we had --
16 if we found an ordnance item in close proximity to one
17 of our boundaries, our initial investigation boundaries,
18 we were required to step out. What that means is we
19 stepped out laterally and to try to find if there were
20 additional ordnance items that could have gone beyond
21 the initial investigation area. We added about 12 acres
22 to the investigation. So the total was about 20 acres
23 that we ultimately investigated based on step-outs.

24 We had the area, the 20-acre area geophysically
25 mapped and we had the UXB geophysicists review the data,

1 100 percent of the data, to select picks and then we
2 also had another geophysicist review 100 percent of the
3 data to select their picks. So we had two separate
4 people, two separate interpretations of the data looking
5 at the data to select the picks.

6 Another QA/QC plan we had was to have 10
7 percent of the overall 20-acre investigation resurveyed
8 by an independent geophysicist. So not only did we have
9 the 20 acres swept, but we had another two to two and a
10 half acres that were also investigated by this
11 independent geophysicist, and in general we had them
12 target the higher risk areas where we did find suspect
13 ordnance items.

14 As a result of all that review, we had 6,000
15 anomalies that were identified and investigated, some of
16 which were beneath roads and we dug beneath roads, we
17 removed steel piping just so that it wouldn't hinder our
18 geophysical survey. There are probably 2,000 linear
19 feet of above-ground steel piping that we removed.
20 There was quite extensive amount of excavation and
21 digging we did there.

22 In the high risk area, we removed 1600 cubic
23 yards of contaminated debris and in some other areas
24 where we found elevated densities of anomalies, rather
25 than hand dig each anomaly, we used the sorter and

1 sifter where we would remove a foot or so of the soil,
2 do a geophysical survey over that cleaned area. If it
3 was clean, if we didn't find any more anomalies, then we
4 would leave our excavation at that depth, run all the
5 excavated soil through the sorter and sifter and then
6 place that soil back in the initial area.

7 If we found that after our first scraping of
8 soil we found additional debris after we surveyed it, we
9 would continue to go down until we didn't have any more
10 anomalies, sort and sift that soil and place it back
11 into the area.

12 We found that it was an efficient way of doing
13 the review and evaluation. It gave us a pretty good
14 level of comfort that we were getting the ordnance items
15 into the areas.

16 After the project was completed, we identified
17 123 of these ordnance items and which were properly
18 disposed of.

19 The next figure will show basically the extent
20 of our step-outs and it also identifies some of the
21 limits of our sifting operations. The initial boundary
22 of our investigation was that purple pink looks like a
23 rabbit figure. That's what we called it out in the
24 field. That was the initial boundary. As we got into
25 investigation, we noticed debris down in the southern

1 end kind of towards the midsection of the rabbit body,
2 and we went down to the south and added another couple
3 of acres in that area, and that's the green, or not the
4 green, but the orange hatchmarked area.

5 As we did our investigation further to the
6 north, the head of the rabbit, we found some more
7 ordnance items there. We stepped out east and west,
8 adding another 10 acres to the investigation, and our
9 final step-out was to the north, a little brown
10 hatchmark area also.

11 As I mentioned before, we have the little black
12 circle marks or black marks around areas that we used
13 the sorting and sifting method to remove debris items
14 and ordnance items.

15 Some of the accomplishments of the project
16 were, number one, that we safely managed all the
17 ordnance items. We had a total of three detonations,
18 scheduled detonations using emergency permits, and they
19 all went well.

20 We used the first commercial use of a blast
21 chamber to do the detonations. Our first two
22 detonations which we received emergency permits from
23 DTSC we used the open detonation methodology. The third
24 one that we pursued we submitted our emergency permit
25 request and there were a lot of concerns from the

1 community. So we elected to try to find another
2 alternative method to do that, which led us to use this
3 blast chamber technology.

4 Other accomplishments that we're happy with is
5 there was a lot of stakeholder involvement. During the
6 process, DTSC and Boeing had four fact sheets produced
7 and distributed to the community. We had probably five
8 to six E-mail letters distributed to our employees also
9 keeping them apprised of the status of the project.

10 We had an open house that showcased the DeMille
11 blast chamber and there we the DeMille people as well as
12 DTSC personnel present, we invited the Sierra Club, the
13 U. S. Army, Navy and Air Force also to be present to
14 observe this; and, in addition, we had the local fire
15 department bomb, sheriff's department present.

16 After we had the open house, then we invited
17 the same group to actually come on site to observe the
18 detonation, and we had the same members, the Sierra Club
19 and the military branches present, and detonation went
20 well. The advantages of the detonation were that it
21 really reduced noise significantly and it minimized the
22 potential for fire.

23 And then finally I wanted to thank DTSC's
24 support. They turned emergency permits in a one- to
25 two-week turnaround time, which was really fantastic,

1 and they helped speed the process. We had Paula
2 Bartarsi and Steve Caine and Jim Austreng very involved,
3 and we're very grateful to have that support.

4 This is the blast chamber. One of the benefits
5 of a blast chamber is it allows you to take a look at
6 the ordnance items to ensure or to determine if they
7 were live or inert. And based on our interviews with
8 the scientists, their conclusion was that the majority
9 of them would be inert. And of the 64 ordnance items we
10 designated in the blast chamber, four of them were live,
11 and this is one of them, and the one in back was a
12 20-millimeter projectile that was inert. So that helped
13 us look at the different ordnance items and also
14 evaluate risk. Gives us more information to evaluate
15 risk.

16 MR. LOWRY: How large is that?

17 MR. LENOX: It's about six inches, two-inch
18 diameter.

19 And while this is working, our recommendations
20 were, writing the report right now, but we feel pretty
21 confident that we've done a pretty thorough job there.
22 Our soil investigation for chemical contaminants will
23 proceed. We're going to recommend that we initiate the
24 soil investigation. Based on the review of the
25 geophysical mapping that we have, our recommendation

1 will be to have no land use restrictions. We think it's
2 safe for our employees and for our contractors to go
3 into these areas now, and ultimately the site census and
4 a field lab in Happy Valley should be closed through the
5 corrective action process, which will probably take
6 eight to ten years.

7 MR. LOWRY: It's now 12:31. I have three or
8 four questions, if you'd indulge me on those.

9 MR. LENOX: Sure.

10 MR. LOWRY: How did you define what your high
11 density areas were that you talked about?

12 MR. LENOX: The high density or high risk
13 areas, we defined them as, number one, one an area of
14 drainage that we knew there were ordnance items in, and
15 we found them during our soil investigation. So that
16 was the key area that we targeted initially.

17 In back of our propellant gun range, there was
18 a backstop area where the projectiles would strike this
19 earthen bermed area that was supported by a steel
20 structure back of it. We considered that another high
21 risk area, and we had another tunnel facility where they
22 did do testing of projectiles. We may have had
23 projectiles in some of the waste sand. So in that area
24 was another high risk area that we evaluated.

25 MR. LOWRY: All right. Did you do an analysis

1 or do you have an estimate as to how many items of
2 ordnance remain in the eight- to ten-acre area that you
3 worked on?

4 MR. LENOX: How many remained after we
5 completed?

6 MR. LOWRY: How many are there today, right.

7 MR. LENOX: We did a very thorough review and,
8 no, we haven't done any calculations or anything like
9 that, but we've got a lot of redundancy built into the
10 program and a lot of review, and we're at a point where
11 we feel it's safe to reoccupy the area.

12 MR. LOWRY: Would you have any confidence
13 saying there is less than 10 items left? Have you
14 thought about those types of numbers, one, two, ten, a
15 hundred, a thousand?

16 MR. LENOX: Well, I'd like to tell you that --
17 I hiked the area. I'm responsible for soil sampling in
18 there -- that aren't any in there. Of course, you can't
19 make a guarantee, but I have the level of comfort and
20 confidence that we were very thorough, we had a lot of
21 redundancies built into the study, and that it's safe
22 for us to go into the area.

23 MR. LOWRY: Is the redundancy factor a key
24 element of your confidence level?

25 MR. LENOX: Yes.

1 MR. LOWRY: Am I correct that there is no
2 statistician sitting in Seattle or Santa Susana who has
3 done a probabilistic analysis saying at a 95-percent
4 confidence level we believe there are no more than so
5 many items left, anything like that?

6 MR. LENOX: We wouldn't do that in Seattle.
7 They're making planes there. Better be making planes.

8 MR. LOWRY: Doing a fine job.

9 MR. LENOX: We hired experts to do the project.
10 We hired UXB to do it. Our facility is more of testing
11 rocket engines and we have staff to do chemical
12 assessments in the soil. We're relying on experts in
13 the field to do that type of evaluation or risk
14 evaluation.

15 MR. LOWRY: All right. Is that in process or
16 is that going to be part of your report, or do you know?

17 MR. LENOX: It will be something that we will
18 discuss with Jim Austreng and find out what exactly we
19 need to put in the report so DTSC is comfortable with
20 our conclusions.

21 MR. LOWRY: Okay. Fair enough. And one
22 question which is unrelated to the preceding questions.
23 There was some discussion earlier about that there are
24 environmental costs to doing a full-scale scrape and
25 sift approach which it appears Boeing did. How do you

1 respond to those concerns?

2 MR. LENOX: Well, we did it in pockets in the
3 high risk areas. We didn't do it across the facility,
4 for one thing. But we did do a very, in my opinion, a
5 very thorough evaluation. It was very costly. It was
6 scheduled to be about a six-week investigation. That
7 ended up turning into a one-year-long field effort. So
8 probably about two million dollars worth of work.

9 MR. LOWRY: How does the Range Rule fit into
10 what you did, if at all?

11 MR. LENOX: I'm not that familiar with the
12 Range Rule. My understanding it applies more towards
13 the DOD bombing ranges. Ours was a propellant test area
14 with smaller items. We have better -- well, we have
15 scientists that have worked the area. We have a pretty
16 good background and history of the use areas there.
17 It's a much smaller scale operation than what would be
18 used at a bombing range.

19 MR. LOWRY: Did you look at all to any of the
20 standards or levels of cleanup in the Range Rule
21 considering what you should do?

22 MR. LENOX: No, I did not. We prepared our
23 work plan and submitted it to DTSC, and our opinion is
24 that it really doesn't fall into that.

25 MR. LOWRY: Okay. It's 12:35 more or less.

1 Thank you very much for coming. You've been very, very
2 helpful.

3 I'd like to break for lunch right now and,
4 Claire, do you have anything you want to add?

5 MS. BEST: If anybody wants to make comments,
6 please make sure you give your speaker request form to
7 Kim.

8 MR. LOWRY: Let's try to return at 1:20,
9 please. Thank you.

10 (Whereupon a lunch recess taken.)

11 MR. LOWRY: I had set a 1:20 start time with
12 the hope we would actually start at 1:30. It's now
13 1:32. If everyone can please take your seat, we can
14 resume our program.

15 We have with us Dan Miller, a Senior Deputy
16 Attorney General for State of Colorado. Dan has done a
17 lot of work on the area of federal facilities litigation
18 with the Army, Department of Energy. I've known him
19 longer than I want to remember in my professional
20 career. I invited him specially out here to help us.

21 For the record, the Lowry bombing and gunnery
22 range is not related to my family, as far as I know.

23 (Laughter.)

24 MR. LOWRY: So thanks for coming in.

25 MR. MILLER: Thanks, Ed. My presentation today

1 is basically going to be a brief summary of state's
2 involvement in the cleanup of the Lowry bombing range,
3 which is located about 20 miles southeast of Denver.
4 You see it there on the lower right. The western
5 portion of the range is actually in the City of Aurora
6 and the rest of the range is in unincorporated Arapaho
7 County. You can see a blue area there on the range.
8 That's the Aurora Reservoir, which is a very popular
9 recreational area.

10 The bombing range was acquired in 1938 and was
11 used heavily for training during World War II with both
12 practice and high explosive munitions. It also
13 continued to be used through the Korean War and the
14 Vietnam War.

15 It was transferred -- there have been several
16 range clearances at the bombing range. We've gone
17 through them a little bit on the slide. In the early
18 1960's when the bulk of the range was transferred out of
19 federal ownership, the United States indicated that for
20 the most part the range was safe for any available uses.

21 There have been some subsequent cleanups post
22 transfer.

23 You know, I'm an attorney. It's the first time
24 I've ever tried to do a power point presentation in my
25 life. So it's not surprising we're having problems.

1 The site this is a site map of the bombing
2 range. It shows several of the bomb targets,
3 air-to-ground gunnery ranges, mortar ranges and so forth
4 scattered throughout the range. It's about a 60,000
5 acre parcel of land.

6 Current ownership, the blue area is owned by
7 the State of Colorado State Land Board, yellow is
8 private ownership and the green is municipal or other
9 public entity ownership.

10 Current land uses, the State Land Board for the
11 most part has leased the land that it owns to various
12 ranching operations. There is also a hunt club out
13 there. So it's largely recreational and grazing. There
14 is some limited residential use currently that's there
15 is the green. The red areas are the recreational areas.

16 But development is fast encroaching, and you
17 can see the yellow areas here. The yellow screen areas
18 are areas where there has been new or proposed
19 residential development. Of particular interest is the
20 about four rows up and four rows in from the right-hand
21 side there is a yellow dot there. That is a section of
22 land that is adjacent to bomb target number six, and
23 that has been proposed for basically rural residential
24 type uses.

25 The green areas on the far right is kind of

1 rural residential ranchette type development, and the
2 State Land Board at the moment hasn't moved very long
3 along in its development plans for its portion of the
4 range, which is about 27,000 acres.

5 A little bit of the project history here, the
6 state really got involved in the site following the
7 issuance of an archive search report. The archive
8 search report is primarily a review of existing records
9 relating to the bombing range, but it did involve a
10 couple of very limited site visits.

11 The archive search report concluded that there
12 was a probable risk of catastrophic harm based on the
13 unexploded ordnance remaining at the range, and so that
14 initiated a series of discussion between the State
15 Health Department and the Corps. The Corps did initiate
16 a time critical removal action in the explosive ordnance
17 demolition area at the range, but we got into some major
18 disputes over their willingness to perform additional
19 removal actions that we felt were appropriate. We had a
20 tentative resolution of those issues in fall of '96 and
21 then the Corps began a broader investigation, that's the
22 EE/CA, which is engineering evaluation and cost
23 assessment, a small scale remedial investigation
24 feasibility study, and that's when we really got into a
25 dispute with the federal government on this issue

1 because we were very concerned about the thoroughness of
2 the proposed characterization that they were undertaking
3 in the EE/CA and we had a lot of problems with the risk
4 assessment methodology as well.

5 So in the summer of 1997 the state issued an
6 emergency order under the state hazardous waste law
7 which the United States refused to comply with. We then
8 sued them in state court and they removed the case to
9 federal court. We began settlement negotiations, and
10 ultimately in the spring of 1998 we reached a settlement
11 agreement, which I'm happy to report the court has been
12 implementing in very good faith, and we're in generally
13 pretty pleased with the implementation of the agreement.

14 The reason we were so concerned about the range
15 is that there were a number of instances where people
16 had come across live UXO. They are listed up here in
17 the slide. In particular, the sheriff's office had
18 responded over a period of just a couple years to 25
19 reports of potentially live ordnance and, in response to
20 those reports, detonated either on their own or with the
21 assistance of explosive demolition team from Fort Carson
22 27 pieces of live ordnance.

23 So we felt that we had sufficient evidence that
24 there was significant amounts of unexploded ordnance in
25 the range and we also believed that we didn't know where

1 everything was. We knew from the archive search report
2 that that report had identified a certain number of
3 bombing targets and gunnery targets, but our health
4 department people had independently discovered
5 additional bomb targets that were not identified in the
6 archive search report. So we knew that we didn't know
7 what was there.

8 In addition, we knew that we didn't know the
9 extent of any of the bombing targets that had been
10 identified, how much UXO was there, what types of UXO
11 were present or the extent of those areas, and we also
12 knew that there were technological limitations in terms
13 of identifying and clearing ordnance.

14 So a lot of our concerns that led up to the
15 issuance of the state administrative order and the
16 subsequent lawsuit had to do with the proposed
17 characterization methodology that the Corps refers to as
18 grid stat/site stats. This is the methodology that they
19 still use at other sites in the country.

20 And in our case, it involved using a random
21 distribution of sampling grids, which has the lowest
22 probability of finding hot spots if you're looking for
23 something that is not homogeneously distributed, as
24 would be the case with UXO.

25 On top of that, and probably a more serious

1 problem is that they employ a very small sample size,
2 typically less than two percent of the land area. We
3 did some statistical analysis actually using a GIS
4 system and modeling the location of grids that they were
5 proposing to sample at the bombing range and showed that
6 if you had an impact area or a hot spot with a 770-foot
7 diameter that there is a 38-percent chance that there
8 wouldn't even be a sampling grid located within the hot
9 spot. So you could completely miss it.

10 And even if you did have sampling grids located
11 within hot spots, the small sample size is inappropriate
12 for the relatively, and I emphasize relatively, low
13 density contamination that we found at the bombing
14 range. Using a 2.2 percent sample, or three percent,
15 one percent might be fine if you have hundreds and
16 hundreds of pieces of UXO per acre, but for the
17 densities that we were concerned about, 139 pieces per
18 square mile, for example, there is an 18-percent chance
19 that, given the sampling density the Corps was
20 employing, they would find that area as clean instead of
21 finding the ordnance.

22 At lower densities the probability of
23 determining it's clean when it's not rises
24 significantly, and even with 250 pieces per square mile,
25 there is a five percent chance that you would determine

1 the area was clean when it wasn't.

2 So this is another chart just showing the
3 statistical uncertainty that arises from using such a
4 small sample size and trying to extrapolate an estimate
5 of what the UXO density is. And in this example, if you
6 have a one-square-mile sector with two-percent coverage
7 and you find two pieces of UXO, you could conclude the
8 true UXO density could range anywhere between 25 to 265
9 pieces in that square mile.

10 So based on this sort of statistical analysis
11 and a risk assessment model called the OE cert, which is
12 still the Corps' model of choice and which I'm not going
13 to go into in any detail, but which we also have a lot
14 of problems with the assumptions underlying the risk
15 assessment model, the Corps recommended in its EE/CA
16 there be no cleanup of bomb targets one, three, four,
17 five and seven and fairly limited cleanup a bomb target
18 two. Bomb target six, which is an area that has also
19 turned out to be of significant concern, was not
20 evaluated at that time.

21 So as I said earlier in the project analogy,
22 the state's concern over the what we felt was a very
23 poor attempt to characterize and determine the nature
24 and extent of UXO contamination at the site led us to
25 issue an order getting litigation and settlement

1 discussions.

2 Ultimately in the spring of '98, I guess it
3 was, we reached a settlement agreement that provides
4 kind of a layered approach to cleaning up the range, and
5 it consists of accelerated cleanup actions at areas
6 where we knew there was UXO contamination, screening the
7 site with an advanced technology called synthetic
8 aperture radar to attempt to identify any hot spots we
9 didn't already know about, a visual surface
10 reconnaissance of areas that we had some reason to be
11 concerned about but hadn't yet done a detailed
12 evaluation of so didn't know if there were really
13 serious UXO problems or not, and then finally continued
14 support. The Corps will provide continued support for
15 changes to land use as the area becomes developed. I'd
16 like to go through each of these even though I see the
17 little red light here.

18 MR. LOWRY: That's all right.

19 MR. MILLER: Again, these were the known areas
20 of concern of the various bombing targets. The thing
21 that looks like a piece of pie in the lower left-hand
22 that overlaps the Aurora Reservoir was a 20-millimeter
23 range and then there is a few gunnery ranges and mortar
24 ranges identified there all in pink or brown.

25 The accelerated cleanup actions that we agreed

1 in the cleanup addressed all the known historic impact
2 areas, and the Corps agreed to do UXO removals, people
3 going out there side by side with the magnetometers, mag
4 and flag approach and digging UXO items. The work to
5 date that we've done, even though we identified these
6 various bomb targets up there, we actually have only
7 worked on bomb target two and bomb target six. That was
8 a matter of shifting priorities due to potential
9 residential development in the area of bomb target six.

10 The work to date at bomb targets two and six
11 has shown that the actual UXO densities are at least an
12 order of magnitude higher than those predicted by the
13 Corps' statistical methodology. For example, at bomb
14 target two, the EE/CA predicted a density of somewhere
15 between about a third to seven UXO per acre. The actual
16 density to date, and this is kind of a moving number
17 because we're continuing to do digs, is pretty close to
18 40 pieces of live UXO per acre. So that's two orders of
19 magnitude higher than the low end of the estimate.

20 To date, actually, this is a little bit out of
21 date, but we found over a thousand live pieces of UXO,
22 including 166 live high explosive items. There is a
23 list of various types of things that have been found.

24 In addition, although the original idea was to
25 clear only to a 1,000-foot radius, after doing some

1 initial transects and mapping, it became clear that the
2 size of this target was substantially larger than that
3 and the clearance area has now been expanded to
4 somewhere between two to three thousand feet radius.

5 Bomb target six, actually, the EE/CA predicted
6 no live UXO in the area and recommended no action. We
7 have found 422 live items to date, and again you can see
8 a list of the various types of things that have been
9 found there.

10 The second part of the cleanup agreement was to
11 help us identify things that we didn't know about, the
12 additional hot spots or areas of concern that had not
13 previously been identified. We proposed to use a
14 relatively new technology called synthetic aperture
15 radar. We didn't know and still don't really know if it
16 is going to work, but it appears promising, although
17 we're pretty early in the project.

18 So the SAR was flown somewhat behind the
19 original schedule, but the data has all been collected,
20 it's being analyzed and we hope to have it all completed
21 in the next 12 to 24 months. It's a pretty time
22 intensive process just analyzing the data from the
23 flights.

24 This is an example of the data that you get.
25 The large square here shows, I think that's a square

1 mile. And various images that show up on there are
2 shown magnified above and below. On the right, you can
3 see it's actually identified, the lower right picture is
4 a three-pound practice bomb. Those contain spotting
5 charges that are roughly equivalent to a shotgun shell.
6 So it identified one of those three-pound practice
7 bombs. We haven't run the validation yet, but it looks
8 somewhat promising that this technology might be able to
9 identify where there are hot spots.

10 The third prong of the settlement agreement was
11 a visual surface reconnaissance of areas that we have
12 reason to believe might contain UXO. It's a systematic
13 visual survey with magnetometer supplement as
14 appropriate particularly in areas of high vegetation
15 density, and so it covered all the known areas of
16 concern other than those the Corps already agreed to
17 clean up. They did about 1845 acres were visually
18 surveyed during summer of '98, and they found 51 live or
19 suspected UXO items during that process.

20 Now, this would lead us to do additional
21 characterization with mapping and transects and so forth
22 to identify further areas requiring clearance.

23 Finally, we have the UXO support for changes in
24 land use. This is basically an in-perpetuity commitment
25 on the Corps' part to come back and assist in

1 identifying UXO risks that might be associated with
2 changes in land use.

3 Currently, the bombing range is largely
4 undeveloped, but if you recall from the vicinity map I
5 showed early on, it really is just on the fringe of
6 suburban development in the Denver area and anybody who
7 gets "National Geographic" might remember seeing a
8 picture of urban sprawl in the Denver area called
9 Highlands Ranch, and many people are predicting the
10 Lowry bombing range may become the next Highlands Ranch.
11 It certainly is a beautiful area with incredible views
12 of the front range being up above the reservoir is a
13 pretty nice spot.

14 So in this UXO support for changes in land use,
15 the Corps has basically agreed to work with the state
16 and developers and the local governments to do two types
17 of activities, both anomaly avoidance, which is helping
18 people to avoid siting or conducting activities in areas
19 where there might be UXO and helping them evaluate the
20 risks that could be posed by UXO in an area, and then
21 also to do UXO support that if somebody wants to come in
22 and put in residential area or do some excavation or
23 something, the Corps will conduct any needed clearance
24 to accommodate the proposed change in use.

25 The original cost estimate that the Corps had

1 for this project for was in the order of six million
2 dollars. Currently that's gone up an order of
3 magnitude, and I would not be at all surprised if some
4 of those numbers went up substantially more than that.
5 You can see that the estimates on bomb targets one, four
6 and five haven't gone up very much. We haven't really
7 done very much work at bomb targets one, four and five
8 because, again, the potential for real estate
9 development in the area of bomb target six moved that up
10 on the priority list. So that's my presentation.

11 MR. LOWRY: Thank you. A couple follow-up
12 questions. I would hate for the lesson of this to be
13 that you need to sue the Army to get an appropriate
14 cleanup. Would you comment on that?

15 MR. MILLER: Well, that unfortunately was our
16 experience. Once we, as I said, one we got the
17 settlement agreement in place, we found that the people
18 in the field have been pretty diligent about making the
19 kind of appropriate decisions.

20 I think one thing that would help would be for
21 EPA to revisit the munitions rule where they deferred
22 regulation of closed, transferred and transferring
23 ranges and to rule that munitions that land on those
24 ranges are solid wastes. That would open up the area
25 for -- it would certainly clarify the state's ability to

1 deal with those issues.

2 MR. LOWRY: What was it that made it possible
3 to reach the settlement?

4 MR. MILLER: Well, currently there is a fair
5 amount of legal uncertainty, I think, as to the state's
6 authority to regulate UXO activity. I think we had a
7 good case on merits in terms of we had to proceed to try
8 to get injunctive relief. I think we had discovered
9 enough ordnance by late '97 to indicate that there was a
10 serious problem.

11 And actually what really helped in the actual
12 negotiations was getting the involvement of a general
13 from the Corps of Engineers. General Griffin was very
14 willing to step forward and, you know, take some risks,
15 I'm sure, from his perspective and do what appeared to
16 him to be the right thing to do.

17 MR. LOWRY: Is there an antideficiency clause
18 in your agreement?

19 MR. MILLER: Well, I didn't talk about the
20 agreement very much. What actually has happened is that
21 our settlement agreement is not legally enforceable. We
22 have reached the technical agreement. That's what I was
23 describing up there.

24 What we've done is to put our lawsuit on
25 temporary hold. It's in administrative closure and

1 actually that closure is due to expire in another month,
2 and the thinking was under the schedule in the
3 settlement agreement most of the work that was laid out
4 in the agreement would have been done by now. It hasn't
5 turned out that way, not for lack of effort, but because
6 there was substantial more ordnance than the Corps
7 thought there was at the time they entered into it.

8 So although they've been implementing it in
9 good faith, we haven't really gotten quite as far as
10 we'd like to go. We're hoping to extend the
11 administrative closure on the case for another couple of
12 years. At the end of that time, hopefully most of the
13 work will have been done, and we've already developed a
14 pretty fair amount of trust among the parties. When the
15 case comes out of administrative closure, we've agreed
16 to dismiss it, but our dismissal is without prejudice.

17 MR. LOWRY: Let me speak parochially from the
18 State of California. Is the order of magnitude increase
19 of costs at this site being funded by money which was
20 slated for cleanups in California?

21 (Laughter.)

22 MR. MILLER: No, I think it was all from Iowa.

23 (Laughter.)

24 MR. LOWRY: Not to worry then. I guess on a
25 serious vein, how we in fact in our DSMOA process have

1 suffered from statements from the United States saying
2 in effect you can spend it on this, but it will come out
3 of that. There is only so much money here. How do you
4 address that on a serious basis?

5 MR. MILLER: Well, I think that this issue
6 needs to really get onto the national political scene.
7 I mean, this is a huge cleanup problem. The bombing
8 range is a formerly used defense site. It's been in
9 nonfederal ownership since early 1960's. There is
10 thousands of FUDS across the country, and the reason I
11 think that we haven't had a lot of problems to date is
12 that most of these have been in relatively remote,
13 undeveloped areas. Well, that's changing.

14 You know, the total price tag for cleaning up
15 all these sites could be very, very large. And I think
16 it's time that not only the Department of Defense and
17 the various military agencies, but the Congress really
18 try to come to grips with this and put an appropriate
19 amount of resources into developing better technologies,
20 working on things like synthetic aperture radar, working
21 on improving their ability to distinguish things that
22 show up on computerized magnetometer searches to
23 distinguish nails from pieces of UXO.

24 That was something we had hoped to be able to
25 do here at the bombing range, but so far it's been

1 totally worthless. The Corps has had to dig every
2 single anomaly that they found.

3 So they need to work on those approaches. I
4 think probably they need to really look much more
5 seriously at broad scale, non mag and flag approaches,
6 sort of the strip mining approach which obviously has
7 collateral ecological damage, but if you're talking
8 about an area that's going to be turned into a suburban
9 residential development, the last time, I don't know how
10 they do it out here, but in Colorado those areas all get
11 pretty chewed up anyway. So there probably are places
12 where that sort of approach makes sense, but obviously
13 more technology development is needed and more funding
14 overall for cleanup is needed.

15 MR. LOWRY: Have you considered at all the
16 implications of the state taking ownership of the
17 property?

18 MR. MILLER: Well, the state has ownership of
19 half the bombing range, and we have looked into that
20 somewhat. Obviously it a problem, especially for the
21 State Land Board. Like any state's land board, it's
22 tasked with maximizing the return on those state lands
23 to give the money to education. So the land board wants
24 to develop the land, essentially needs to develop the
25 land, but it's not clear if all the land is developable.

1 And it's not clear -- they have -- I mean it's
2 such a large parcel that in a land use planning process,
3 they could probably say, okay, well, here's bomb target
4 six. We know we don't want to have a school there or we
5 know we don't want to have residences there, but I'm not
6 sure what you do want to have there.

7 As one of the speakers mentioned, there can be
8 significant exposures from recreational use. In
9 Colorado we do have frost heave, we do have erosion
10 events, and things that were buried can come to the
11 surface.

12 So it's not entirely clear what the ultimate
13 solution for the bombing range is going to be. At the
14 moment we're basically employing a best available
15 technology approach and the court has agreed, albeit
16 it's not a legally binding agreement, but they have
17 agreed to basically be on the hook forever for their UXO
18 support for changes in land use.

19 MS. WOLSTONCROFT: I wanted to pick up on a
20 comment that was made by a previous speaker, Lenny
21 Siegel. Has Colorado commented on the Range Rule which
22 is being developed currently in Washington, and,
23 secondly, do you agree with the statements made earlier
24 by Mr. Siegel concerning the appropriate state role in
25 any Range Rule?

1 MR. MILLER: The State of Colorado did submit
2 comments on a draft Range Rule and I wasn't able to hear
3 all of Mr. Siegel's presentation, but if I can put words
4 in his mouth, he probably said something along the lines
5 of it's important to have independent state regulatory
6 authority over these issues, and I would agree 100
7 percent.

8 MS. WOLSTONCROFT: Thank you.

9 MR. PHILLIPPE: Dan, you said that the EE/CA
10 density estimates turned out to be about an order of
11 magnitude low. Were those initial estimates based on
12 archives information, just historical information, or
13 were they based on field good stat/site stat?

14 MR. MILLER: They were based on the Corps' good
15 stat/site stat statistical sampling methodology which is
16 the methodology they're using at sites across the
17 country. That was one of our comments, in fact, about
18 the Range Rule was that the rule itself doesn't say
19 anything about how they investigate the sites or how
20 they do the risk assessment, and those are the real guts
21 of the program.

22 That was the reason we were sufficiently
23 concerned that we issued a unilateral order and went to
24 court was we didn't think they were looking very hard to
25 find UXO. I think the implementation of the settlement

1 agreement has shown we were correct. There is a lot
2 unexploded ordnance out there and a lot of it has been
3 live.

4 One point that sometimes gets lost here is that
5 even though the amount of live ordnance is dwarfed by
6 the inert UXO, any time somebody other than a trained
7 ordnance expert comes across a piece of ordnance related
8 scrap, the only safe thing to do is to call the bomb
9 squad or to call, if there is a military base nearby,
10 call their explosive demolition team.

11 So in addition to reducing risk, the clearance
12 actions that we're conducting out there are ultimately
13 reducing significantly the amount of expense placed on
14 local governments in responding to these sort of
15 incidents.

16 MR. LOWRY: All right. Thank you very much for
17 coming.

18 We have Scott Goldie, I think senior vice
19 president Pacific Bay Homes. Accompanied by one other
20 person who you can introduce.

21 MR. GOLDIE: Thank you. We don't have a power
22 point chart, so hopefully we don't have anything to mess
23 up.

24 Good afternoon, my name is Scott Goldie. I'm
25 senior vice president, division manager for Pacific Bay

1 Homes, Northern California division, located in Benicia,
2 California.

3 I'd like to start by thanking Director Lowry
4 and the department for inviting us here today to speak.
5 We think this workshop could not be more timely. Our
6 presentation, which is a fairly short one, we're going
7 to concentrate on a couple of the recurring issues that
8 have come up this morning, one related to resources that
9 could be brought to bear on sites that need to be
10 remediated; and, number two, we'd like to talk about
11 additional safety measures that can be employed and use
12 our site as an example for that.

13 Right now in this economy we have an
14 opportunity to take advantage of the current health of
15 the economy, unprecedented growth statewide and the
16 demilitarization of our nation to address environmental
17 issues left by others long ago. Following the
18 Governor's call for balancing economic and environmental
19 concerns, the remediation and reuse of properties
20 formerly used by the military will help protect virginal
21 lands from development while fostering the economy and
22 providing much needed housing in our state.

23 To that end, my company, Pacific Bay Homes, is
24 working cooperatively with the Department of Toxic
25 Substance Control and the U. S. Army Corps of Engineers

1 to clean up a 200-acre property in the City of Benicia,
2 California, for ultimate residential development. This
3 property called Tourtelot was leased briefly by the Army
4 during World War II.

5 With regard to this project, I have
6 responsibilities not only as a home builder, but as a
7 parent and as a neighbor. My family and my three small
8 children live in a house adjacent to the Tourtelot
9 property. My children will play there, my neighbors and
10 their children will live and play there. Our children
11 will go to Matthew Turner Elementary School, which is
12 very near the site. For these reasons, the site must be
13 made completely safe.

14 Today, while this property has been fenced off
15 and is guarded 24 hours a day, it is an attractive
16 nuisance and it is a liability in our community. And as
17 a parent and as a neighbor and as a home builder, I
18 cannot leave this property in its present condition.

19 As a home builder, I have additional
20 responsibilities to develop environmentally safe
21 communities. Specifically at Tourtelot we are 100
22 percent certain that absolutely no one will be able to
23 come into contact with any of the hazardous materials
24 left by the Army when we have completed our remediation.
25 The Tourtelot cleanup project is consistent with each of

1 the objectives and responsibilities I have outlined.

2 The goal of the Tourtelot cleanup project is to
3 remediate the property to the high level of safety and
4 environmental protection required by its zoned and
5 intended land use, which is residential. Today, land
6 use and economics are driving the cleanup of developable
7 properties like Tourtelot.

8 On properties with ordnance issues where
9 residential development is desired, the land use can
10 dictate that significant additional resources be
11 expended to enhance the ability to identify and remove
12 ordnance. Property owners willing to voluntarily make
13 such investments working in concert with nearby
14 neighbors, the community, local government, and
15 regulatory agencies can develop and apply site specific
16 standards that enable timely and beneficial reuse of the
17 property.

18 We cannot continue to push development out into
19 agricultural lands at the expense of our society and our
20 children. In north Los Angeles County, where I used to
21 work, friends of mine that lived in the communities of
22 Palmdale and Lancaster would literally take their
23 children to gymnasiums, makeshift daycare centers, at
24 5:30 in the morning. These children would be in their
25 pajamas and they would sleep on mats on the floors of

1 these gymnasiums. Every day on their two-hour commute
2 to work they'd go through the City of Santa Clarita
3 where a site, the Bermite facility, formerly used
4 military facility, entitled to over 2500 housing units,
5 including affordable housing and community resources
6 such as a future town hall, lies fallow; and the irony
7 of passing the site each day is not lost on communities
8 such as Palmdale and Lancaster, where the effect of
9 these long commutes have revealed themselves in a
10 community of latchkey children with sliding educational
11 test scores, escalating crime and juvenile delinquency
12 and high divorce and bankruptcy rates. We need to
13 achieve a job and housing balance to relieve this
14 traffic gridlock and ease the burden on these social
15 strains.

16 The residential development of projects like
17 Tourtelot that are fortunate be well located in
18 desirable areas and close to employment centers can help
19 ease such social problems while at the same time fund
20 the burden of cleaning our national defense legacy.
21 Working cooperatively together, public and private
22 agencies can clean up these properties and address
23 environmental conditions created by others long ago
24 today.

25 Now, I would like to introduce Dr. Peter

1 Russell to talk about how engineering synergies can be
2 used on developable properties and why speaking again as
3 a parent, neighbor and home builder I am confident that
4 Tourtelot will be completely safe when we are done.

5 Dr. Russell is an environmental engineer with
6 more than 20 years of experience. He's a California
7 registered engineer and holds a PhD from U. C. Berkeley.
8 He is the project coordinator for the Tourtelot cleanup
9 project and works directly with the U. S. Army Corps of
10 Engineers and the Department of Toxics and Substance
11 Control, in addition to a team of environmental
12 professionals that include Department of Defense
13 ordnance specialists.

14 With that, I'd like to introduce Dr. Peter
15 Russell.

16 DR. RUSSELL: Thank you, Scott. It's as the
17 project coordinator for the Tourtelot cleanup project I
18 have had to address some of the same questions that are
19 the focus of this workshop. In particular, how much UXO
20 can be removed using the state-of-the-art technology,
21 exactly how do you apply the technology and how safe it
22 will be when we're done.

23 The short answer to these questions is that we
24 are taking existing tried and true technology and
25 applying it more extensively and more thoroughly to make

1 sure that we have property that's completely safe. In
2 the remainder of my time, I will explain.

3 First, it's important to understand that we are
4 fortunate to have straightforward cleanup before us.
5 The Tourtelot property is small. It's 200 acres. The
6 Army's use of the property was of limited period time
7 and it was mostly limited to demolition in certain
8 demolition type activities in a few distinct areas.
9 Most importantly, the Tourtelot property was never used
10 as a range either for bombing or artillery testing. No
11 unexploded ordnance has been found, and even OE has been
12 encountered in only few areas, which is not surprising
13 since the site was never used as a range.

14 There is little vegetation on the property,
15 scattered bushes, a few trees and also very importantly,
16 we have a very favorable geology. In most places the
17 bedrock is within 10 feet of ground surface.

18 All of these characteristics factor into our
19 cleanup approach. The detection technology we intend to
20 use is the same state-of-the-art digital geophysics that
21 earlier speakers have described. As the technology
22 improves, we will add and employ any proven advances.

23 At a small site where normally the Corps would
24 perform a 10 percent QA/QC sweep, we are able to resweep
25 100 percent of the property as an added assurance check.

1 There will be no reliance on statistical sampling.

2 At a property with bedrock close to the ground
3 surface, mass soil removal, the ultimate in areawide
4 clearance, can feasibly be applied. Please recall
5 Dr. Marqusee's symbolism of detecting ordnance by
6 pointing to every square foot of the ground. We are
7 achieving 100 percent detection by clearing away every
8 square foot of the ground.

9 The excavation to bedrock has at least three
10 major benefits. First and most obvious, if any of the
11 ordnance were to elude the 200-percent point clearance,
12 it would be removed with all of the soil and the bedrock
13 that is to be dug up and relocated.

14 Second, when the soil is deposited in thin
15 lifts at its destination, it will be reswept again and
16 again using digital geophysics.

17 Third, that same soil which has now been swept
18 at least three times will be isolated and covered by at
19 least 14 feet of compacted crushed bedrock that is known
20 to be free of any OE.

21 By taking advantage of energy synergies such as
22 these, cleanups can leverage the ability of existing
23 technology thereby eliminating the need for deed
24 restrictions or other institutional controls. We can
25 make property safe for residential development by

1 employing these redundant assurance checks. By engaging
2 our considerable resources now, we can alleviate the
3 burden of our national defense legacy today rather than
4 waiting for a magic cure-all.

5 It is important to remember that time is a
6 critical component of safety. Public and private
7 entities and local communities can work together to
8 address the environmental conditions created by others
9 long ago.

10 In the case of Tourtelot, by enhancing our
11 ability to identify and remove ordnance and then
12 checking several times to confirm our success, we are
13 100 percent confident that the property will be
14 completely safe when we're done.

15 I'm sure I may have forgotten something, so we
16 may want to submit written comments at a later date, but
17 thank you for your time.

18 MR. LOWRY: Thank you, and please feel free to
19 commit any comments you want.

20 I think you're the first set of speakers who
21 have used a number of confidence level as dramatic as
22 100 percent. I don't know how to say this without
23 sounding silly or obnoxious, but you're a Ph.D. from the
24 University of California at Berkeley and you're
25 scientist and you're saying that there is one hundred

1 percent sure there will be no UXO. There are probably
2 some people who will say it's a silly statement. How do
3 you respond?

4 DR. RUSSELL: I respond the risk evaluation
5 itself that very fundamental premise of that is when
6 there is no exposure, there is no risk. And inherent in
7 our cleanup approach is to eliminate any excess,
8 eliminate any possibility of exposure, not rely on
9 simply detecting everything and removing it. We're
10 removing the medium in which it might occur.

11 MR. LOWRY: What's the fairly dramatic level of
12 confidence, what's driving that? Why are you doing
13 that? Why not settle for a lower number?

14 MR. GOLDIE: Well, again, if I could answer
15 that question, not only am I building there, but I live
16 there. We ultimately have to live with this
17 development, myself physically, but ourselves as a
18 company, and it's not good enough for us, in our
19 opinion, to rely on just the sampling or just surface
20 clearance. We are going to these added redundancies to
21 get to a much higher level of confidence.

22 MR. PHILLIPPE: One of the things that we're
23 wrestling with at Fort Ord is development of areas
24 adjacent to ranges, and you guys are developing not only
25 on the Tourtelot property, which was formerly part of

1 the Benicia arsenal range and associated with it, but
2 nearby the rest of the remaining range. How do you
3 address any risks that might be associated with putting
4 people that close to the remaining arsenal?

5 MR. GOLDIE: If I can answer that, and, Peter,
6 please feel free to fill in. To my knowledge, the
7 Benicia arsenal was not a range, was not used as a
8 range. So that consideration, at least to my knowledge,
9 is probably not applicable.

10 To the extent there are other issues offsite,
11 we are discussing that with the department. It is being
12 factored in some extent into what we're doing, but as I
13 said in some of my comments about where I live and where
14 the property is located, we already have houses in that
15 area. So to do nothing with that site is a response
16 action that is not acceptable in our community. So to
17 the extent there is anything offsite, we're addressing
18 some non OE issues on adjacent city property as part of
19 our cleanup which is related to TNT strips. I think if
20 that answers your questions. Peter.

21 DR. RUSSELL: Well, I'd just like to underscore
22 one part of what Scott Goldie said. I think the
23 question has the premise that we're dealing with a
24 range, and since we're not, it's very difficult to draw
25 parallels between Tourtelot and Fort Ord. It's very

1 much an apples and oranges situation. The items that
2 you may find on the range are far more sensitive than
3 what one normally finds outside of a range environment.

4 MR. PHILLIPPE: Well, the arsenal still is a
5 location where there were past munitions and is going to
6 be cleaned up over the next number of years. So it may
7 not have been a range in the same sense as Fort Ord, but
8 there is an unexploded ordnance issue to be addressed at
9 Benicia arsenal. That's really maybe I used the wrong
10 phrase.

11 MR. GOLDIE: Again, if I could answer that, the
12 one property that we know of that's adjacent to our site
13 that needs to be addressed is a property called the
14 Gonsalves property. It's our understanding that the
15 Army Corps as part of their EE/CA investigation has
16 funding to address that property this year. We are in
17 open dialogue with the department of how that may or may
18 not impact our site. That's the only site within the
19 arsenal that has enough proximity that I'm aware of that
20 would have an impact.

21 MR. LOWRY: Thank you very much for coming.

22 Next we have Dr. Hassan Amini. Dr. Amini is
23 the principal geoscientist for the Irvine office of
24 McLaren/Hart. Welcome, Dr. Amini

25 DR. AMINI: Thank you, Director Lowry. I would

1 like to take the opportunity and thank you for allowing
2 me to speak today. Also, I want to take the opportunity
3 and congratulate you, Director Lowry, for the
4 professionalism of your team that has put this workshop
5 together. We worked in the last few weeks with
6 Miss Claire Best and Mr. Bill Albert, and they were most
7 patient and gracious and great examples of hard working
8 dedication. So I want to make sure that I say that to
9 you.

10 With me I have also in the audience two
11 gentlemen. One of them is Mr. Joe Body. Is Joe here?
12 He is one of our UXO experienced project managers who
13 has worked with me in the last at least five, six years
14 on UXO projects. Also I have in the audience Mr. Wes
15 Clark from Blackhawks Geomatrix, more of a technologist
16 and a firm that has participated in developing
17 technologies of detection.

18 They are also my co-authors of probably the
19 most recent UXO article published in "Pollution
20 Engineering." We made copies of it available outside
21 for the audience, and I want to tell you a bit about my
22 experience working on a number of these sites. Topics
23 that I'm going to be covering during these few minutes
24 are going to be including these bullets that I'm pretty
25 sure you have in your handout and I'm going to be not

1 going to every one of those bullets.

2 Most every site that I've been involved with
3 has common features, as we've seen here, that they
4 started in remote locations far from populated areas
5 where at one point nobody really cared what went on in
6 these facilities, and with time these sites have become
7 very attractive real estate because of the opportunities
8 for redevelopment, and some of our previous speakers did
9 talk about the importance of having that balance between
10 the growth and environmental safety and environmental
11 protection.

12 Ironically, the most recent three sites that
13 I've been involved are all surrounded by heavy
14 residential today. At one point they were remote canyon
15 lands and hillsides, and now they are practically
16 islands in developing areas. So the question comes can
17 you put a fence line around these and say that no
18 trespassing, nobody goes into these properties.

19 I'll tell you from my own personal experience
20 as a young boy, I loved to climb every fence. In fact,
21 that was a great challenge for me to violate any warning
22 sign basically, and I'd love to go to Area 51, by the
23 way, and see what's going on there. So it's really
24 human curiosity.

25 Another very important point here is that when

1 we talk about residential development in terms of
2 chemical risk, that makes any regulator shiver,
3 residential with chemical risk and so and so forth, but
4 in this case maybe it's a different perspective that we
5 want to take here, because let's not forget that
6 residential development do offer the opportunity for the
7 most stringent cleanup, if you want to call it, and this
8 is definitely one of those cases that we cannot afford
9 leaving these places alone and saying let's not worry
10 about it.

11 My recommendation will be definitely going for
12 full cleanup. Now, some of our former speakers talked
13 about the importance of working all the parties together
14 and having this team spirit and synergy. I think it's
15 extremely important right from the beginning the
16 developer or the future beneficiary of the property,
17 regulator, the community people, the owner, operator,
18 consultant, I mean and all these people come together
19 and define basically their goals as what we are trying
20 to do with this piece of property and what is the end
21 use, and devise basically an approach that is going to
22 be responsive to that end use.

23 And also I think it's extremely important that
24 in the process of meeting those goals we stay flexible.
25 What that means is that practically every speaker here

1 told me that, told us that there are many, many unknowns
2 and we are basically learning about every property as we
3 move forward and make progress. So, therefore, there is
4 a reason to be flexible and not to be really uptight
5 about the work plan that we have developed and if any
6 deviation is thereafter, therefore, that is basically a
7 dead project. So that's a very important topic as well.

8 Based on our experience, these properties -- by
9 the way, none of these properties that I'm talking about
10 are former DOD facilities, but they are contractors'
11 facilities who did testing, assembly and testing of the
12 munitions for DOD. They have some common traits, I
13 guess they share.

14 One of them is that they have a particular area
15 for administrative and support functions. Now, other
16 areas are production or assembly areas. Not every
17 facility has production going on. Some of them just
18 they brought the material, they put them together and
19 tested there.

20 Storage areas are definitely away from the
21 support areas and from production areas, because of the
22 safety issues. Test areas typically are in box canyons,
23 enclosed areas for containing the activities and
24 ricochet of the material as well as the noise issues.
25 Disposal areas are separate, and, of course, in every

1 one of these that we have been involved with there is a
2 buffer zone around these properties.

3 Now, the question becomes do we really need to
4 go and have the same approach for every one of these
5 areas, every one of those, I guess, land use, historic
6 land use areas, and would that be uniform.

7 The answer is probably not, but there are
8 definitely certain areas of concern and examples of
9 those are as you listed here. Now, the impact of UXO at
10 each one of these facilities will be different from the
11 other one.

12 Now, I can tell you that when we did put some
13 numbers actually in our article about the typical
14 contribution of UXO or the total number of UXO found in
15 each one of these target areas. In a nutshell, I can
16 tell you that those open burn, open detonation
17 operations in any of these typical facilities will be
18 probably be adding up to about 90 percent plus of the
19 UXO items. The rest of the material or 10 percent of
20 the material will be usually in certain areas.

21 So what do we need to do. First of all, I
22 think this was mentioned earlier and I want to emphasize
23 that we got to have a knowledge of ordnance and the
24 types and sizes of the ordnance that was handled at the
25 facility. We got to know what they were. We need to

1 know what the function of each one of those were. Some
2 of these munitions were produced to pierce armored
3 vehicles, tanks. Others were produced just to strike
4 the enemy's feet and disable them in a very small area
5 of influence.

6 Because of that function and based on that
7 function, we can also devise safety procedure for not
8 only the future, but also for the people who are
9 actually working in detection and cleanup of these
10 operation. We got to be employing detection techniques
11 and technologies that are compatible with the type of
12 the ordnance we have, and also we got to know if some of
13 these are in the present time and also in the future if
14 they are missed, for example, for sake of just
15 hypotheses, what will the impact of short-term and
16 long-term on the environment, will they decay with time
17 and if they decay, what kind of material are they going
18 to be releasing. All of that knowledge is very, very
19 important.

20 Now, the typical technical approach for
21 assessment and mitigation of such property will based on
22 primarily a complete understanding of the history of the
23 site and site conditions. I don't have to go through
24 details of how to do that. There is not much difference
25 between what we do here and any other remedial

1 investigation projects. Site history from records, from
2 interviews, from aerial photographs, from topographic
3 maps, you name it, and all that needs to be brought
4 together.

5 Based on that information we need to identify
6 target areas, and again those target areas, I showed
7 some examples of these, and based again on the type of
8 material and target areas, we need to employ experienced
9 UXO qualified team who are using state of the art
10 detection equipment and are hundred percent supportive
11 of using digital equipment that is capable of taking
12 information and logging that electronically and
13 downloading that material to the database or whatever
14 that is, because the more human involvement we have, the
15 more manual, I guess, work we have, the more there is
16 possibility for errors and omissions and so on and so
17 forth.

18 We favor practically hundred percent
19 documentation. Measuring the total field and anomalies
20 across at a range or across the OBOD, whatever that is,
21 is very crucial. That is not say that mag and flag is
22 not a very good technique. Our experience is there is
23 certain areas that you are not going to be able to
24 mobilize digital equipment to make anomaly maps and
25 those very inaccessible; and, therefore, mag and flag

1 and using smaller portable equipment to get into very
2 difficult places near bushes and tree branches so on and
3 so forth become extremely important.

4 I think also it's very important to know that
5 you can put the best team together and you can put the
6 best equipment in the hands of the team, but if you
7 don't have a very stringent quality assurance quality
8 control mechanism and procedure, you may have a room
9 for, I guess, deletion or omission, and I think it's
10 very, very important that we recognize the importance of
11 that very stringent QC program.

12 Now, every phenomena when we look at that at
13 the beginning may appear random. But based on our
14 experience as we look at these operations, we suddenly
15 see certain pattern. They follow certain distribution
16 pattern. And I think realizing that and recognizing the
17 importance of that will help us to maybe minimize or
18 focus, zoom on the areas that we need to.

19 Give you some examples. We mentioned here
20 that, for example, the pattern of the solution around an
21 old DOD range will typically be circular. And why is
22 that? Because simply we have this sort of splashing
23 pattern, if you want to call it, from a central area and
24 that's going to leaving a circular pattern.

25 On the other hand, if you have one side of that

1 DOD range to be a hill, the other side is going to be
2 flatland, the pattern is going to be semi-circle or
3 half circle or maybe even elliptical. Likewise, the
4 pattern around the range and the target practice area
5 will be more conical in shape.

6 Also, it's very important to recognize the
7 geography, the topography of the area, as some of the
8 former speakers alluded to, and know that simply certain
9 areas, especially on hillsides, may be subject to
10 landslides, to rapid geologic changes. Material that
11 used to be on the surface may be covered with rapid
12 erosion and deposition, and also recognize the
13 importance of transport by streams and so forth. These
14 are some important issues that we need to work into our
15 work plans and our characterization and remediation.

16 Now, in terms of selection of remedy, the first
17 three bullets, removal and onsite detonation, removal
18 and offsite detonation and blowing in place, are simply
19 a function of or dependent on how stable the material is
20 and what is the condition or existing condition of the
21 facility. Can we simply detonate these and annihilate
22 these on site or is it safe to transport these through
23 some neighborhood.

24 The issue of blowing in place is a very, very
25 important matter that I think we need to be focusing on

1 that and considering that to be more of an emergency
2 response and on-the-spot decision for the professionals
3 who are really qualified to make that decision. Certain
4 items may be sitting there for years and undisturbed,
5 but you cannot disturb those because they determined
6 that to be unsafe, and I think that decision needs to be
7 left to the site personnel and UXO experts with certain
8 communication, obviously, with the authorities.

9 Finally, I want to make sure that I think we
10 all are troubled by quantifying this residual risk, if
11 you want. All of these steps we're talking about will
12 reduce or eliminate the main area of risk, but there
13 will be certainly some residual issue. What will you do
14 with that? I think we need to be really open-minded in
15 taking some measures, institutional, I guess making
16 decisions on how to eliminate or minimize that residual
17 risk.

18 For example, by implementing appropriate
19 grading, if you want to call it. And I want to make
20 sure that we're really on board with what we're trying
21 to say here and what we're trying to do here. Or
22 putting certain land use in areas that may contain that
23 residual risk.

24 Thank you.

25 MR. LOWRY: I was going to ask you about

1 residual risk not thinking that you were going to get
2 there, but you did. So thank you. All right. Thank
3 you very much for coming.

4 Our next and last prepared, prepared is not the
5 right word, but last scheduled speaker, is Jane
6 Williams, executive director of California Communities
7 Against Toxics.

8 MS. WILLIAMS: First of all, thank you for the
9 opportunity to speak before you today, although I feel
10 as though I should not be speaking to you but rather to
11 everyone behind me. So I'm going to time myself because
12 I know we're way behind schedule. I don't want to take
13 any of your time or the audience's time. I know we have
14 a lot of public comment.

15 First of all, I wanted to point out to you that
16 all of the previous speakers that you've heard from
17 today, their job is a wide variety of jobs. One to
18 protect the DOD's mission, to protect the DOD's budget,
19 to develop land, to try to increase their tax base, and
20 I want to make it very clear to everybody in the
21 audience and to you that my job is to advocate for
22 public health. That's my job. And I represent 80
23 communities who have spent many years, hard-earned
24 dollars of their own and a lot of blood, sweat and tears
25 to try to protect public health in their communities

1 from a wide variety of toxic threats, UXO only being one
2 of them.

3 And want to I thank you very much, Director
4 Lowry, for having this workshop. I believe it's very
5 long overdue. I believe we sit at the threshold of
6 really new policy decisions and a new effort on behalf
7 of Congress and the federal government to really
8 grapple with the issue, and I think very timely to bring
9 everything together and to hear the different points of
10 view.

11 I thought I would just give a little bit of
12 historical perspective. I went with my grandfather who
13 was a World War I veteran to France about 10 years ago,
14 and he was in all the major battles of the campaign,
15 which there were six and he was the first hundred
16 thousand troops over and the last troops back. And one
17 of the forests that we visited was the Argonne, a very
18 famous battlefield. And I cannot tell you what it was
19 like to stand in this forest knowing that all the wars
20 that have been fought through that part of the world
21 over the last many centuries, and to be denied access to
22 that forest. You cannot go to that forest. It is
23 fenced off. Public access is denied because of
24 unexploded ordnance. Not only munitions, conventional
25 munitions, but also chemical warfare agents.

1 So this is not a new issue. I guess that's my
2 point. This is not a new issue, and we are not the only
3 country, not the only state grappling with the issue.

4 Now, we are, I believe, one of the few states
5 or one of the few political bounded entities that is
6 grappling with an influx of five million people over the
7 next 10 to 20 years. I don't think that any other area
8 of the world that is so contaminated with UXO is facing
9 the kinds of development pressure that we are. And that
10 is why I believe that we are one of the political
11 entities again, one of the states that is most suited,
12 well suited to grapple with this issue.

13 I think what you heard today, Director Lowry,
14 was that we have a tremendous amount of uncertainty, a
15 lot of uncertainty in how many sites there are that are
16 contaminated, what the extent of that contamination is.
17 I thought the Attorney General from the State of
18 Colorado did a very excellent job in trying to show that
19 what they thought was there wasn't really there, that it
20 was much worse than they thought. I think that's what
21 we find a lot when we look at these sites.

22 I think the public policy decision before us is
23 what to do in the face of that kind of uncertainty. One
24 of the things I wanted to point out to you is, as you
25 well know and as other members of the audience may know,

1 I serve as the chair of the technical subcommittee for
2 the Chemical Warfare Materials Forum, and we are
3 grappling with issues on chemical warfare materials. I
4 also work on nuclear waste issues and plutonium in Ward
5 Valley and all these things. One of terms that comes up
6 quite a bit when you're looking at these kinds of issues
7 are transtechnology.

8 Essentially we have created a problem for which
9 we really don't have a good technological solution yet.
10 As you see from the testimony before you, there are
11 threshold technologies being developed. The synthetic
12 aperture radar is one of them.

13 The public policy decision before us is what
14 action do we take on land development in the face of
15 tremendous kinds of uncertainty and without the
16 technologies that we really need to correctly identify
17 the risk.

18 And I think some of the speakers prior to me
19 did correctly point out the fact that it's really a
20 stakeholder issue and, of course, there is development
21 pressures. Developers want to develop land. Local
22 government wants the tax base for the land, but those
23 kinds of pressures cannot be allowed to override basic
24 public health considerations, and if there is one
25 message I would like to send everyone in the room very

1 clearly is that public health should be paramount.

2 Resource constraints, I heard some of the
3 previous speakers talk about that. I am not very
4 sympathetic to that. I personally helped cut over 200
5 million dollars last year from the Chem DeMille budget
6 because of mismanagement and creating the necessary
7 offsets for a lot of other things in the DOD budget, I
8 believe we do have money available. It just needs to be
9 reprogrammed and the correct kinds of political pressure
10 need to be brought about to do that.

11 This is clearly a very large issue for
12 California. We have almost 20 percent of the sites in
13 the country, but yet we have a very small percentage of
14 the budget that is being dedicated to this issue.

15 When we take a look at cleanups under Superfund
16 and the state Superfund law and RCRA corrective action,
17 we're looking at releases, exposures that are chronic
18 exposures to chemicals. The issue of unexploded
19 ordnance is a different kind of scenario. It's a
20 catastrophic release scenario. It is having people
21 blown up basically from exposure to UXO. It's a
22 tremendous risk, and when you have that kind of risk, I
23 think it demands a different kind of risk paradigm than
24 we're commonly used to thinking about.

25 When we're managing risks from chronic

1 exposures to chemicals, we're using remediation goals,
2 we're using MCL's for water, we have a whole sort of
3 regulatory system set up there. Similarly, when we
4 managing risks from hazardous waste considerations,
5 we're looking at destruction removal efficiencies of 98,
6 99 percent. We're doing a lot to try to manage risk
7 from exposure, not that I think we're going a correct
8 job, but we're doing a lot more than we are in this
9 area.

10 Currently there is no policy. There is no 10
11 to the negative four or 10 to the negative six. There
12 is no policy that says we have got to get 99 percent of
13 before we develop the land. I think this is an area we
14 started the conversation on and we need to continue the
15 conversation on.

16 The other issue I want to point out is one of
17 intergenerational equity. As you know, the organization
18 I represent is predominately people of color. They are
19 very concerned about children's health. UXO is a legacy
20 issue. It's a legacy from the cold war and in some
21 cases legacy from prior wars. If we have the
22 opportunity now to deal with these kinds of risks and to
23 reduce or to greatly minimize the risks to the next
24 generation, it's our position that we should do that.
25 We don't want to just keep passing on the risk to the

1 next generation, and by developing land and leaving some
2 UXO in place we essentially are doing that. We're
3 saying, okay, the next generation when we have a freeze
4 or when this comes up or when someone is digging their
5 backyard for a pool, we're going to put that off on the
6 next generation.

7 We have some of the technologies that we need
8 now, not all of them, and we certainly have many of the
9 resources that we need and we certainly have the focus
10 of the public on the issue. Just the number of people
11 that came to the conference today and the number of
12 community groups that are now affected by UXO issues
13 across the state I think show that we have the kind of
14 energy that we need to maintain the focus that we have.

15 I want to echo the Attorney General from
16 Colorado basically summed up his presentation by saying
17 that what we need is more money for cleanup, which I
18 agree with, and we need better technology development.
19 As in any other technology arena, what drives technology
20 development is the need for technology. If the current
21 regulatory structure which is in place sanctifies the
22 existing technology, we'll never get the development of
23 new technology.

24 Congress foresaw the problem of UXO issues back
25 in 1992. They started appropriating money. There is

1 current appropriations going on in Congress for not only
2 looking at the survey and analysis technologies, but the
3 technologies to find the UXO, but also to look at
4 stopping the open burning and open detonation of
5 technologies.

6 We need to keep that focus. We need to enhance
7 that focus. I could come up with a couple of really
8 good ideas such as working through the Environmental
9 Counselors of States, ECOS, one of our senators sits on
10 the DOD appropriations committee. We have a lot of
11 avenues that we have available to us to get the kinds of
12 resources and the kinds of technologies developed.

13 Just to sort of sum up, what I believe is that
14 we have -- maybe you can help me, Director Lowry. I
15 don't know if it's the Fourth Amendment or Third
16 Amendment, but there is not an amendment, it's actually
17 part of our Constitution, that forbids the billeting of
18 soldiers in our homes. The Second Amendment.

19 MR. LOWRY: Constitutional scholars out there.

20 MS. WILLIAMS: The Second Amendment forbids
21 billeting of soldiers in your home, and I would strongly
22 urge you to use that when we are talking about this and
23 putting this in context because certainly the
24 constituency that I represent do not want soldiers or
25 unexploded ordnance billeted in their homes, and to the

1 extent that we have the resources available to us and we
2 have the political focus, we should take advantage of
3 it.

4 Thank you for the opportunity to address you.

5 MR. LOWRY: Thank you very much. In the
6 interest of time, and I appreciate you rushing through
7 your presentation, one question that comes to mind and
8 you may be uniquely qualified to answer, you represent a
9 number of local citizens groups and so forth. How do
10 you view the role of the state as opposed to the role of
11 local communities and local community organizations?

12 MS. WILLIAMS: The role of the state in this
13 issue and the experts that the state has available to us
14 is critical. I cannot underscore to you how critical
15 that role is. Because of the pressures that are brought
16 on to local government for development, for increasing
17 tax base, in many instances it is my, unfortunately, my
18 considerable experience with local government that
19 public health often takes the back seat. And the kind
20 of expertise that's needed on munitions, when you're
21 talking about complicated survey and analysis
22 techniques, advanced technologies, local governments are
23 not set up, they do not have the kinds of resources that
24 are needed to have the discernment required to know is
25 this site really cleaned up, is this site available for

1 the kinds of land use that we want.

2 So I believe the answer to you is that the
3 state plays a critical role, and I would hope that your
4 department would play an increasing role in gaining the
5 kinds of expertise that's needed on the issue.

6 MR. LOWRY: Let me ask you one other question
7 if I may. How do you bring in Mr. Goldie's well stated
8 comment we don't want to be dropping our kids off at
9 5:30 in the morning and coming back at 8:30 at night in
10 terms of need for housing? Where does that play into
11 all this?

12 MS. WILLIAMS: I think there is a critical
13 need, there is going to be an increasing critical need
14 both in the inner core and some areas of the outer core
15 for low income housing and for clean schools. And as
16 you know, this debate on UXO takes place within the
17 larger context of brown fields development as a whole.
18 This basically is a brown fields issue. And balancing
19 the needs of communities and minority communities
20 especially who are impacted both socially and
21 economically in many cases by vacant lands that are
22 contaminated is an issue that we're grappling with on a
23 policy level.

24 But I would just reiterate to you that I do not
25 believe that it is necessary to have public health take

1 a back seat. I believe that it is possible for us to
2 look at reducing risks to land.

3 Now, whether or not we have the kinds of
4 technologies that are currently available that I would
5 feel comfortable, that my communities would feel
6 comfortable with, saying that we can go ahead and build
7 public housing on old contaminated UXO sites, I am
8 certainly not willing to say that now. I don't believe
9 the technologies that we have can get the kind of
10 clearance that we need.

11 Maybe there is a combination of technologies
12 that is available, a protocol we can put up that would
13 make people feel more comfortable with it. But, again,
14 I think too often development pressures and developers
15 themselves try to put public health on the back seat
16 saying that we need this, we need this, we need this.
17 Well, yes, that's true, but as my mother would say, Tom
18 Smith doesn't go to school any more because, you know,
19 he was affected by a UXO. So I mean I think again it's
20 very important not to put public health in the back seat
21 when you're try to balance this.

22 MR. LOWRY: All right. Thank you very much for
23 coming.

24 MS. WILLIAMS: Thank you for the opportunity to
25 speak.

1 MR. LOWRY: That concludes our presentation by
2 well prepared speakers. What I'd like to do now is open
3 the public comment period of this workshop. I believe,
4 Claire, you have a list of speakers and what you could
5 do is call out the first three so those people can be
6 ready to come up.

7 We're doing all right on time, notwithstanding
8 the fact that we are only three hours late. Given the
9 list of speakers, if you limit your comments to three
10 minutes, we will be out of here by the end of the day.
11 It may be that some of you feel you have to talk a
12 little longer. We were pretty relaxed with our prepared
13 speakers. Let's how it goes with the public speakers.

14 MS. BEST: Okay. I know that you can't see the
15 little timer here, but we have mikes over on the side
16 for to you come up to because we thought it would be
17 more convenient than having you trip up the stairs. So
18 I'll call your names and please go to whichever mike,
19 freestanding mike is convenient for you, and because you
20 can't see the timer, I'll hold up a card when you get to
21 near the end of your three minutes.

22 We'll begin with Sherry Butters, then Myrna
23 Hayes and Howard Sherman and Marilyn Bardet. That's the
24 order. So you can get over to the mikes as conveniently
25 as you can. Thanks.

1 MS. BUTTERS: Hello, my name is Sherry Butters,
2 and currently I'm working on the Tourtelot property
3 project. And it's come to my attention that there needs
4 to be a slight clarification in a couple of the terms
5 during the presentation earlier.

6 I'm a UXO specialist and work with UXO on a
7 daily basis, and in the presentation it was stated that
8 there were no UXO found on the Tourtelot property.
9 Everyone who is familiar with the property knows that
10 there were ordnance items found.

11 The clarification that I would like to make for
12 you is that basically in order for it to qualify as a
13 UXO, it needs to be delivered and not functioned as
14 designed. Okay. The items that we found were basically
15 from knockout. They were never fired. It was not a
16 range. So we are placing those items in the category of
17 OE.

18 MR. LOWRY: Thank you very much for your
19 comment.

20 MS. HAYES: My name is Myrna Hayes and
21 community co-chair of the Mare Island Restoration
22 Advisory Board. I think next week will be my sixth year
23 in that role. Thank you for the opportunity to speak.

24 In communication technology we all know that
25 one of the raging issues is technological ghettos that

1 occur in rural areas or low income urban areas because
2 the investment in the infrastructure development will
3 not result in an economic return that's great enough for
4 the companies making those investments.

5 The military's commitment and dedication that
6 we heard this morning to ordnance safety doesn't seem to
7 translate to some of our overseas bases. And I'm
8 concerned that communities in California with weak
9 political structures and low economic return will suffer
10 as UXO ghettos. So that's just a concern as you develop
11 your policies at DTSC that you not forget about those
12 areas that won't reap that tremendous either residential
13 or commercial development return.

14 Secondly, I want to encourage the department to
15 enter into collaborative multi-focused efforts as
16 described by Rob Wilcox this morning. At Mare Island
17 Naval Shipyard, which is a BRAC base closed exactly
18 three years ago this week, we as a community faced what
19 could have been expected to be the greatest challenge to
20 what has been termed high risk/low trust scenarios in
21 that we had both radiological contamination and
22 unexploded ordnance at our facility.

23 The Navy actually, prior to the base closure
24 three years ago, spent 133 million dollars on survey and
25 removal action for radiological contamination. In that

1 process, by the way, DTSC's RPM helped DTSC define its
2 regulatory role for radionuclides. So I want to give a
3 pat on the back to the agency for that.

4 In addition to ship building, of course, we did
5 have an ordnance manufacturing facility, and both of
6 those presences of those two contaminants could have
7 caused tremendous community consternation and also
8 caused an economic setback for the community. We
9 haven't experienced either one of those effects because
10 of what I feel as a community member as a RABCO chair
11 were very important elements that I can't stress enough,
12 and that was the role of an individual within an agency
13 or a community at the local level who takes the charge
14 seriously of accomplishing the task of, for example,
15 surveying and removing ordnance at a level that the
16 community can feel comfortable with, the community
17 meaning the local reuse authority, the community
18 members, the people who actually live there and whose
19 families will use the facility afterwards as well as the
20 developers.

21 This morning I kind of read between the lines
22 and had the sense that DTSC was looking for a way to
23 develop some policy guidance that could be used
24 throughout the state, and I just want to reiterate that
25 it's my personal experience that each reuse plan, each

1 reuse of a facility combined with the ordnance that's
2 there and the technology for the removal is still
3 dependent on the ongoing communication and dialogue at
4 the local government, state and federal regulating and
5 community level. You still need to make an investment.
6 Regardless of policy decisions you promulgate, you still
7 need to make an investment in individuals at the local
8 level and their continued dialogue.

9 The reason that we had such trust and belief
10 and unexploded ordnance and radiological issues did not
11 backfire in our community was because individuals and
12 the agencies they represented had made the extra effort
13 to communicate with the public on an ongoing basis in
14 very creative ways. For example, our UXO manager with
15 the Navy, if I went into his office, which I was welcome
16 to do any time and, you know, wasn't a top secret or top
17 down environment, had the names of all the people in a
18 geographic area whose houses and dogs were affected by
19 his removal actions and some of his designation
20 procedures on his blackboard in his office, phone
21 numbers, the names, the names of the dogs.

22 I mean to me, I can take that back to the
23 community and say, this guy cares. He picks up the
24 phone and personally calls each one of those people
25 before he does a detonation action to make sure that

1 their dog goes to the doggie daycare for the day.

2 To the extent that the agency can help ensure
3 that all facets of the community are engaged at that
4 level, you're going to go a long ways towards giving a
5 confidence level in the community that the job was done
6 right and reduce the obstacles in your way in a
7 regulatory way that the community can put up. Thank
8 you.

9 MR. LOWRY: Thank you.

10 MS. BEST: Is there a Howard Sherman that
11 wishes to speak? Maybe he's not here then. Marilyn
12 Bardet and Kitty Griffin will be next after Marilyn.

13 MS. BARDET: My name Kitty Griffin. I'm from
14 Benicia, a citizen.

15 This morning we heard the question of how much
16 control the local government should have and I would
17 have been the first to say that local government should
18 have a great deal of control, but I'm here today to say
19 that there is a downside to the local communities having
20 too much control.

21 In our city it's a FUD site and it's critical
22 that there was a private arrangement made in advance of
23 any public knowledge of it, there was a contract that
24 was set up between the Army Corps of Engineers, the
25 developer, Granite Pacific Bay, and the speaker for

1 Pacific Bay neglected to say that the third party to
2 that arrangement was the City of Benicia.

3 If that kind of thing happens in other cities,
4 there is a definite downside to it because it takes away
5 from the community members like myself and the vast
6 majority of people who live in the community any true
7 representation because the city's hands are tied by
8 legal considerations and having their roles co-opted.

9 So the question arises who is the community
10 when you have the community being set up as your
11 representative in these stakeholder arrangements.

12 In the case of the city, what happened was that
13 we lacked information from the very start from many
14 years ago. The city, before this arrangement came
15 about, information was withheld and it was withheld all
16 along. We began to have things that eroded trust.
17 There was discussion about having a public participation
18 program. It was more or less promised and then suddenly
19 the program was announced with a great deal of flourish
20 and there was none.

21 Speed was a great factor and element in the
22 plan. Much was made of setting our own standards in
23 this, and then most disturbing was that because of the
24 commitment that the city had to the plan through this
25 private arrangement, we began to have some misleading

1 things made.

2 I think that you had an example today of the
3 kinds of things not that just the developer said, when
4 you heard Pacific Bay's representative speak about the
5 hundred percent assurance, but this is what we had
6 coming consistently out of the mouths of our city
7 council members and staff. And it was very eroding of
8 trust. The city's role was to have been the lead
9 agency. Much was made of the fact that the developer's
10 role was going to be a minor back seat role, and it
11 turned out that the developer was indeed leading the
12 process.

13 So trust was sacrificed in this particular
14 arrangement, and then the question arose is the
15 community representative represented in this stakeholder
16 arrangements like the CAG that we had. In our city the
17 CAG is not even covered by the local press because it's
18 not considered legitimate. The problem is that
19 stakeholders in general when you use the term, seem to
20 represent people who have a financial stake in things.
21 The city certainly has a financial stake and there is a
22 city representative there. Various other agencies, not
23 the DTSC. The Army Corps certainly has a stake because
24 they get out of paying. Granite certainly has a stake.

25 What is surprising is that the rest of the

1 members of any normal community, not just ours, also
2 have a financial stake. There is a business
3 representation and, of course, housing is very important
4 to them. And even the neighbors because property values
5 are very high up in financial considerations. If the
6 development doesn't proceed, property values will
7 suffer.

8 So I would say that until some of these
9 problems are corrected, I would say that definitely the
10 major decisionmaker should be the state regulatory
11 agency. Thank you.

12 MR. LOWRY: Thank you for your comments.

13 MS. BEST: I was going to call Marilyn Bardet.

14 MS. BARDET: My name is Marilyn Bardet and I'm
15 with a group called CPACT, which is the Committee for
16 Public Advisory Consensus on Tourtelot, and I'd just
17 like to thank the department very much for hosting this
18 conference, something that maybe I had wished for
19 without knowing what form it might take as far back as
20 1997. And my feeling about this is that the community
21 is very liable to coming up with the answers you're
22 looking for.

23 As an example of that, I have to add to Scott
24 Goldie's presentation by saying it was citizens who
25 alerted the Department of Toxics and also the Army Corps

1 of Engineers about the existence and the condition of
2 what were called in a 1989 EIR on a development for that
3 Tourtelot property military bunkers as though they were
4 kind of a relic, an archaeological site from the past
5 that if we just destroyed them and created some rubble
6 and built houses on top it was going to be okay.

7 It was citizens who read that EIR carefully at
8 the time it was being proposed for reauthorization for
9 an extension on a development agreement that allowed to
10 say what are those military bunkers, and we went out and
11 looked at it, checked the conditions, wrote letters, et
12 cetera. It was right after that that developer went
13 ahead and bulldozed the -- they found actually dummy
14 shells, 155 millimeter dummy shell, maybe it was 105
15 millimeter shell, I'm not sure which, but near what
16 became know as the hollow tube test tunnels. Those
17 tunnels were then razed and the whole area graded and
18 all evidence lost.

19 The lucky thing was the community had taken
20 pictures of the area. We knew what the tunnels looked
21 like. We have documentation. I personally know how
22 much the land had been graded, and that led me to ask
23 all kinds of questions like how long have they owned
24 this property, when did they get permission to start
25 grading, who gave them permission.

1 We had no idea about this language. We had no
2 idea we had a FUDS investigation going until we asked
3 enough questions and through Jody Sparks, who was acting
4 on the city's behalf, requested information from the
5 Army Corps of Engineers and we found out that an archive
6 search report had been done in 1994 and the Army Corps
7 had been on the property in 1993 interviewing the
8 property owner, the city officials, fire department, et
9 cetera, but the city had kept all that secret. So we
10 didn't even know there was an ASR available in 1994. It
11 was in 1996 we discovered that.

12 So we have been playing catchup because there
13 was a silence and a blackout on information until an EIR
14 was announced for the cleanup and development
15 simultaneously on February 2nd, 1999, and I started to
16 have to play catchup with a few watchdog types in the
17 community to figure out what was going on.

18 And then because the developer could take
19 advantage of the fact that there was a sunsetted clause
20 in the Superfund legislation, DTSC couldn't get involved
21 for four months, and there we don't know what the
22 questions were. Was it DTSC or Region IX that should be
23 involved, et cetera.

24 I don't think we are a very good example of how
25 things should get started on any site, and I really

1 advise people to welcome the community as participants.
2 Certainly, the Army Corps interviewed all the old-timers
3 in town and people who had vital information, and they
4 have been very cordial to us, as has DTSC.

5 I can't say that I felt that coming from my own
6 city officials. I have been labeled an obstructionist
7 and every other thing, and I have tried desperately to
8 have open communication, a CAG formed, et cetera, to air
9 these kinds of questions that have been raised today,
10 and so I am deeply appreciative of this meeting.

11 Let me just say from my experience, however,
12 that I believe the project -- I feel it's a fait
13 accompli that we'll get housing. So I have always
14 focused my attention on getting the best cleanup
15 possible, and what does that mean. I think we learned
16 today that it means many things, and certainly a
17 coordination of efforts on everybody's part.

18 But I would like to say that I believe the
19 project is better for DTSC's involvement. We absolutely
20 need regulatory oversight at every step and the
21 even-handedness and fair-mindedness of the department in
22 reviewing everybody's positions.

23 For instance, I can give specific examples of
24 two things that have been bothersome. There is the
25 south valley and the north valley. The south valley

1 area where detonation pits existed after World War II
2 and blew up thousands of rounds of stuff including
3 propellents and ordnance and, et cetera. There are TNT
4 strips found on the property that go into contiguous
5 property, and right now it's being considered that soils
6 will be cleared of UXO from the south valley and then
7 removed to the north valley where the houses are going
8 to be built, and the question of why are those soils
9 having to be removed from the south valley into the
10 north valley is a big question. Is that part of the
11 development scheme or is it part of the cleanup?

12 And I've learned it's really part of the
13 development, and it's been permitted by, I believe at
14 least provisionally permitted at this point if you look
15 at the work plans, to allow that dirt to be in place in
16 the north valley. But then the DTSC has put the metal
17 to the whatever it is, pedal to the metal or metal to
18 the pedal, and have required, and I think this is a
19 great step, they have required that those soils go down
20 to the north valley in one-foot lifts and they will be
21 scanned with a magnetometer. Every time the one-lift
22 goes down, they have to scan it again.

23 Of course, we are still concerned that HTRW be
24 removed from those soils. There is a landfill in the
25 north valley that has to be cleaned out, and we're

1 concerned the same developer had built homes on top of
2 former landfill in Benicia and failed to clean out all
3 of the excess waste from that landfill and built homes
4 on top of the landfill.

5 We are also concerned that before anything had
6 evolved with DTSC, pads had already been constructed in
7 the area, houses were built, people were sitting in
8 homes and had never, many of them had never been advised
9 that they had bought homes from Pacific Bay on the edge
10 of a military site that was being discussed as
11 a FUDS -- had been given a preliminary risk assessment
12 in 1993.

13 So for all these reasons, we had every reason
14 to want to ask every question that we had. And I think
15 to date we have a much better project within the limits
16 that we're discussing it.

17 I understand Jane Williams' belief. That was
18 my feeling back in February of '99, but now we're way
19 into this. We're way into this. So all we can do now
20 is work for the best cleanup possible, and I welcome all
21 people who are interested in that kind of level of
22 cleanup and commitment that I've heard from Dorothy Rice
23 and from Mr. Lowry and from everybody at DTSC that we
24 went clean soils and no UXO in that valley, and if you
25 can pull that off, all hats are off to you.

1 MR. LOWRY: Thank you for your comments.

2 MS. BEST: Okay. The next speaker is Brian
3 Harkins, and then we have four speakers from Fort Ord
4 and they want to speak one after the other. They are
5 Chris Shirley, Scott Allen, Kirk Gandy and Richard
6 Bailey. So we'll begin with Brian Harkins.

7 MR. LOWRY: Thank you, Mr. Harkins. Before we
8 start, we probably have fewer community members who want
9 to talk, so we've been a little more relaxed in our
10 police efforts at timing, but please try to make your
11 comments as succinct as you can. Thank you.

12 MR. HARKINS: Thank you. I also wish to
13 express some thanks to the Department of Toxic Substance
14 for having this seminar. I'm Brian Harkins and I'm a
15 member of the community advisory group the Tourtelot
16 Benicia site.

17 My purpose for getting up to speak today is to
18 introduce the CAG to the audience and the director and
19 the group. We are basically a 14-member panel appointed
20 by the local officials. We are citizens. We are
21 neighbors of the Tourtelot site, business owners, school
22 board and city council representatives. We have a real
23 broad cross-section of people. All of us are
24 professionals and many of us have technical backgrounds.

25 I anticipate that many of us are in the

1 audience today. I anticipate that we'll probably meet
2 after the meeting and offer some formal consensus
3 comments that may be more substantive, but I did want to
4 make two points today.

5 First is, I think we are at Tourtelot very
6 fortunate to have a situation, no matter how we got
7 here, which includes a voluntary developer and a citizen
8 process or citizen review group in place to clean up a
9 site which otherwise will stay dormant for a number of
10 years. And as was stated earlier, the site currently is
11 an attractive nuisance and it benefits nobody. In fact,
12 it presents a risk to the neighborhood.

13 I have nine and 11-year-old children, and both
14 of them are out on bicycles, and my concern is the
15 longer this stays dormant, the more likely them or some
16 other neighbors go across there and really do come into
17 harm's way.

18 So on the positive side, I think we've got a
19 very willing developer, and as you can see, I don't
20 think we fit in the same category of many of the
21 presentations that were made earlier. We have a
22 relatively low risk at the site, well-defined site, we
23 have a cleanup plan that is going to essentially
24 eliminate all risks when it's done and I think it would
25 be very sad if we lost the opportunity based on

1 political issues to really pursue the agenda which is
2 sub safety. Thank you.

3 MR. LOWRY: Thong you very much. And welcome
4 to the other CAG members here. Next I think we have a
5 group of people.

6 MS. SHIRLEY: Hi, my name is Chris Shirley.
7 I'm with ARC Ecology, and I offer technical support to
8 the Fort Ord toxics project under the TAG grant for Fort
9 Ord and also for the national RAB caucus on UXO and
10 toxics issues.

11 I have some very general comments. First of
12 all, thanks for this meeting. I found it to be quite
13 valuable and interesting, but my comments are general.
14 I tried to address the question of how can the state
15 help in these efforts to clean up UXO and OE.

16 Jim Woolford observed that there is not a clear
17 rationale for how decisions are made in this world of
18 UXO and OE cleanup, and I wholly concur with that. It
19 seems like every site is completely different in the way
20 that these issues are resolved and I think it would
21 go -- it would be very helpful if the state could come
22 in with some unifying ideas about UXO cleanup and land
23 use controls, and I will give you some ideas.

24 First, at Fort Ord they are dealing right now
25 with the question of on a large base how do you decide

1 which parts of the base to include in the UXO cleanup
2 and which parts to exclude from the cleanup program.

3 At Fort Ord the methodology used to exclude
4 parcels from the cleanup program seemed kind of
5 whimsical and not very rigorous, and we would like to
6 see the state come up with a criteria or a checklist
7 that clearly delineates when a parcel should be included
8 in a UXO and OE cleanup program and when it is
9 appropriate to be excluded.

10 The second thing is to define what's necessary
11 when unrestricted use is anticipated. Right now there
12 are a lot of ideas about unrestricted reuse that range
13 from clean up everything to four or five feet, haul away
14 the soil, bring in new, to lots and lots of deed
15 restrictions and covenants and notices. And I have to
16 say I'm more on the end of the clean it up side things
17 than the notice side of things. And I just want to tell
18 a small story with respect to that.

19 I had owned my house for 12 years and during
20 that time it's been refinanced several times, five
21 times, actually. I have a utility easement across the
22 back of it, and in those five times, it has only been
23 noted on the title search once. So that's a pretty
24 normal sort of thing, and yet it was never -- it was not
25 systematically reported in the title search. So I'm

1 very reluctant to release residential property under the
2 deed restrictions and covenants and that sort of thing
3 to support that kind of thing.

4 Second, I think we need to define standards for
5 recurring review. What kind of information needs to be
6 collected for a recurring review. For instance, I
7 believe that all the after-action reports from
8 surrounding areas need to be reviewed to see what was
9 actually found in adjacent areas, and also any
10 information or data collected during construction
11 support activities needs to be collected and reviewed
12 during recurring review periods.

13 Finally, minimum standards for local
14 ordinances. There are local ordinances being proposed
15 all over the place, dig ordinances, notice ordinances,
16 et cetera. These are being negotiated on a
17 piece-by-piece basis, and I'd like to see the state come
18 up with some kind of standard minimum requirements for
19 these ordinances.

20 And then since I don't have the zero sign yet,
21 I'll go on and say buffer zones. We need to have some
22 standards about how large of a buffer zone to put around
23 known UXO areas. A buffer zone serves two purposes.
24 One is make sure that when OE is destroyed it doesn't
25 impact adjacent properties unintentionally and second to

1 provide a transition zone so that when people are hiking
2 or playing in an area or using an area that they know
3 when they move -- they have a sort of no man's zone
4 between the actual dangers there and where the fence is.
5 So the buffer zone serves the two purposes, the outward
6 and the inward purposes.

7 The last thing on my list is some guidance on
8 how to notify the community destroying an ordnance when
9 it has to be blown in place. Some sort of minimum
10 standards about 800 number, telephone number, how to
11 notify people, whether they should be called or whether
12 they should be expected to call in.

13 I vote for the populations being called, but
14 anyway, some sort of minimum standards so when ordnance
15 is destroyed in place that it's consistent across the
16 state. Thank you.

17 MR. LOWRY: Thank you for your thoughtful
18 comments. What's the list look like?

19 We have nine more speakers. We'll take a 10
20 minute break, come back at 20 to 4:00.

21 (Recess taken.)

22 MS. BEST: Okay, ladies and gentlemen, we're
23 ready to get going again. The next group of speakers
24 will be Scott Allen, Curt Gandy, Richard Bailey, then
25 Linda Millerich and Debra Bailey.

1 When you step up to the microphone, will you
2 introduce yourself again for the court reporter. Thank
3 you.

4 MR. ALLEN: Good afternoon. My name is Scott
5 Allen, as many of you probably know, I was formerly on
6 the restoration advisory board at Fort Ord and I
7 represented the Fort Ord Toxics Project in some
8 litigation against the Army regarding some unexploded
9 ordnance.

10 Part of the part of the goal of the litigation
11 that Fort Ord Toxics Project brought was to establish
12 that unexploded ordnance was in fact subject to
13 environmental regulation and the authority of both the
14 federal and state regulatory agencies.

15 I couldn't help feeling a little bit today that
16 this forum was in part DTSC asking to some degree
17 whether or not they have the authority or whether they
18 should have legal authority to regulate unexploded
19 ordnance cleanup, and I just wanted to say that you
20 already have that authority. CERCLA makes clear that
21 even despite regulation under the Superfund Act, Section
22 120(i) CERCLA says that the hazardous waste laws of the
23 states still apply.

24 Colorado has just gone ahead and taken that
25 authority, as Mr. Miller indicated, at the Lowry bombing

1 range and at other sites. So I just wanted to make that
2 point that you have that authority both under the
3 Hazardous Waste Control Act and the corrective action
4 regulations under there. I think that you can just go
5 ahead and take that authority.

6 I wanted to make just a couple of other points.
7 They are somewhat specific, but Lenny Siegel discussed
8 the fact that the cleanup of unexploded ordnance is not
9 only a safety issue, but there are also toxic material
10 releases that occur whenever ordnance blows up or when
11 it's detonated. There is releases both to the ground
12 and to the air. And I wanted to mention that when
13 cleaning up ordnance and detonating it for blowing it in
14 place or if the ordnance is safe enough to move that
15 blast chambers ought to be used.

16 I wanted to point out there is already
17 provision in state law under Title 22. Section 265.382
18 requires the use of, whenever there is a safe
19 alternative to open detonation, that safe alternative
20 should be used. The land disposal restrictions also
21 would prohibit the disposal of hazardous waste like this
22 ordnance to land. So detonation chambers ought to be
23 used.

24 Even if there is a blow in place, there are
25 technologies available. The tent and foam type

1 materials, there is covers that can be placed on the
2 ordnance when it's blown up to the prevent toxic
3 emissions from being thrown into the air in the course
4 of doing the ordnance cleanup.

5 The final point that I wanted to make was
6 Mr. Lowry in his opening remarks indicated that the
7 state is playing an advice and comment role in most
8 removal actions or remedial actions that the Department
9 of Defense is taking now. Something that's important to
10 communities is the ability to participate in public
11 process through the CEQA process. There is provision in
12 CEQA. The Public Resources Code 21101 requires EIR's to
13 be done whenever state agencies officially comment on
14 federal actions like ordnance cleanup. I just wanted to
15 recommend that Section 21101 be used by the agency here
16 and that you coordinate ordnance cleanups with the
17 Department of Defense to do the CEQA review required by
18 the act, to involve the public in those decisions as
19 they go on.

20 I think the CEQA review is very important. It
21 gives the department the opportunity to do a real
22 thorough consideration of alternatives and the
23 environmental impacts of actually doing the cleanup and
24 I would urge the department to do that in its oversight
25 role. Thank you.

1 MR. LOWRY: Thank you very much.

2 MR. GANDY: My name is Curt Gandy, Fort Ord,
3 California, and I wanted to thank Director Lowry for
4 having this opportunity to speak.

5 I just wanted to frame the context in which the
6 community looks at this issue, and I've tried to reduce
7 it to some kind of a formula because there are so many
8 issues that seem to interplay on each other, and the
9 context that we use or the way we look at it is that you
10 have three factors. One is technology. Technology
11 times methodology equals institutional controls or
12 management of residual risk. So the Department of
13 Defense or the folks that are doing the cleanup, they
14 have control, it would seem, over the technology and the
15 methodology to a certain extent.

16 We're looking to the regulatory agencies, DTSC
17 and EPA, to manage the other end of the equation. So
18 with the understanding that there is residual risk that
19 will not be removed, that cannot be removed with current
20 technology, we're looking to the agencies to control the
21 exposure and threat to the public.

22 I just wanted to hit a couple items here. I
23 wrote them down in a kind of random fashion, so forgive
24 me if it sounds like they kind of bounce around, but one
25 thing that we're looking at is what's acceptable risk.

1 And in that context, since you're supposed to be
2 protecting the public, any injury or death is a failure
3 of the process, and that's different than this hazardous
4 toxic waste figure one in a million.

5 This isn't a triage. We're not talking about a
6 plane crash and who's going to survive. This plane
7 crash is totally preventable. You know, the extreme
8 case is just prevent access to these areas where we know
9 there is a problem.

10 Another issue is what's the rush for the
11 conveyance. I think this is the single biggest myth in
12 the entire process. There seems to be this -- I'm
13 speaking now for Fort Ord because I realize there are
14 other places that have unique cases, but there seems to
15 be this myth about economic recovery. There is numerous
16 reports in the "Wall Street Journal," the Rand
17 Corporation did a study, and they said that the models
18 that were used to evaluate and predict economic doom and
19 gloom from base closure and the need to rapidly turn
20 over this property, they were very inaccurate, and we're
21 still living with this economic myth.

22 Right now, on the Monterey Peninsula, this is
23 some of the best economic times that we've had, and
24 there is data to support that. People argue the facts
25 back and forth. The point is what is the need. If

1 we're so close and there is such promising technologies
2 that are going to be available very soon, why do we have
3 to do this stuff now? Why is there regulations being
4 proposed and actually been put in place to circumvent
5 existing regulation that says that we have to follow a
6 certain process to protect the public.

7 So we're really looking to DTSC to do that. I
8 would even suggest you want to form a specific group to
9 deal with this specifically. I know you got very good
10 people Jim Austreng, Stan Phillippe have been working on
11 this issue for a long time, but I think maybe DTSC needs
12 to expand that group to address this issue, especially
13 since you have such a vast number of sites, federal
14 facility sites in California. Thank you.

15 MR. LOWRY: Thank you for coming. And thanks
16 very much. We've had some people who have traveled long
17 distances to get here from Monterey and elsewhere.

18 MR. BAILEY: Good afternoon, I'm Richard Bailey
19 from the Monterey Bay.

20 I came here to speak on behalf of the civilian
21 oversight board for the cleanup process. Now, my
22 authority to speak on this issue are twofolds. One is
23 personal authority. I've been involved in the
24 Restoration Advisory Board at Fort Ord since 1996. I'm
25 a director of the local chapter, Monterey chapter of the

1 United Nations. We're concerned with land mine removal
2 all over the world, including depleted uranium and those
3 sorts of things and our task is cut out for us in that
4 regard. I'm a member of the Fort Ord Toxic, one of the
5 directors of the Fort Ord Toxic, which is a nonprofit
6 trust organization concerned with the cleanup operation,
7 and we have, among other things, been educating the
8 public and also implementing necessary lawsuits when the
9 agencies have failed to perform their functions.

10 Now, the other authority has to do with the
11 citizens oversight board. The Restoration Advisory
12 Board is an example of the citizen oversight board, and
13 when I say that because we got our authority from the
14 President and implemented by the Congress and the Army
15 was supposed to be the funding agency which would
16 provide the funds and we would have oversight over the
17 function of the Army cleanup, which is the principal
18 polluter, and also the regulators in terms of their
19 particular function, that includes the EPA and state
20 agencies and the local property agency such as FORT.
21 And I can tell you that situation has been one terrible
22 dog fight. We are well aware of our mission which is
23 long-term protection of the health and the environment,
24 and we intend to carry out that function.

25 Well, that's basically what I have to say.

1 MR. LOWRY: All right. Thank you very much.

2 Who's next? Linda Millerick. Welcome.

3 MR. MILLER: Thank you. My name is Linda
4 Millerick and I represent two groups today because one
5 of our men couldn't be here. I'm with Save Our
6 Resources, which is a citizens group that's been
7 fighting furiously to protect our health and those of
8 the 8,000 asthmatic children in Monterey County and
9 everybody else that has pulmonary and respiratory
10 problems because Fort Ord is unique place where they
11 plan to burn 10,000 acres to either remove ordnance,
12 identify it, find it for a variety of different reasons,
13 and all of us in Salinas Valley and the south and
14 southeastern boundary of Fort Ord in the downwind path
15 of all that smoke and pollution.

16 And the Highway 68 Coalition is the other group
17 that I was asked to speak for. I live in that area, and
18 on most of the literature and reports from the Army they
19 don't even identify we are there. They say the land to
20 that area east of Fort Ord is undeveloped land, yet
21 Highway 68 corridor has 13,500 people, subdivisions,
22 major big Jack Nicklaus golf course going in and half
23 million dollar homes, but we don't live there. There is
24 nobody there, and we feel that is wrong.

25 Our health is at stake. Our livelihoods. I

1 have chronic bronchitis so it does affect me. I have to
2 leave my home when they burn.

3 So this is the main thing. The health issue is
4 not being adequately addressed, and that's our primary
5 goal, but then also as a citizen group we'd like to see
6 more community involvement. The community actually
7 welcomed into the process. We feel like we're being
8 tolerated and sometimes just not even wanted there.

9 I appreciate this chance to come and have this
10 workshop, and it would be great to maybe have it maybe
11 some other places throughout the state or if the video
12 would be available for other groups to take back to
13 their bodies and share what was the rapport that went on
14 here today might be a way.

15 But I would die for that group that they even
16 called for removing their dogs when they were going to
17 do something. We have to call every day to see when
18 they're going to have open detonation. They stopped
19 calling us. So it's on my phone bill every month, every
20 day to call. Maybe somebody could give us an 800 number
21 that we could call in and not be expense of the
22 community, but we want them to stop any open detonation,
23 any open burning whether there is toxins in it or not.
24 The smoke is horrible.

25 Last year's fire that lasted three days, the

1 air district's calculations in that three-day period of
2 time, releases of 18 to 19 tons of pm 10, 15 to 16 tons
3 of pm 2.5, which is even smaller, ruins the lungs, and
4 126 to 238 tons of carbon monoxide in that three-day
5 period. We've had six burns since '97 and they've all
6 been inundating our community. We feel that we're not
7 lab rats. We should not be made lab rats.

8 And may I just read one thing to part with.
9 Speech has power. Words do not fade. What starts out
10 in a sound ends in a deed. That's from Rabbi Abraham
11 Joshua Hessel, and I think that might be pretty fitting
12 to what's been going on and needs to proceed from here.
13 Thank you.

14 MR. LOWRY: Thank you very much. We should try
15 to find out a way to make the videotape available, and
16 as I think I mentioned at the beginning, we'll put the
17 transcript on our website and I believe we're going to
18 make all the documents that were sent to us available on
19 the website as well, if I'm not mistaken.

20 MS. BEST: I just have one thing to tell the
21 community is that it will probably take us about three
22 weeks to get the transcript from the court reporting
23 service. So if you don't see it right away, it isn't
24 that we forgot it. It just takes it a while.

25 MR. LOWRY: Go ahead.

1 MS. BAILEY: Hi, my name Debra Bailey. I live
2 right adjacent to the Superfund cleanup site known as
3 the former Fort Ord, and I want to thank you for all
4 inviting us here and I also want to thank you for
5 protecting us from the Army and local politicians and
6 developers that are in such a big hurry to reap profits
7 that they are willing to put the public's health in
8 danger.

9 I'm going to read to you, it's a combination of
10 reports that I've done on the track zero proposed plan,
11 comments on no action proposed plans and the early or
12 dirty transfer that the Army and local governments want
13 to do.

14 Let's see. The early or dirty transfer must
15 not happen. The Army fails to adequately describe the
16 environmental condition of the property in these
17 documents in the area known as the former Fort Ord.
18 Facts do not cease to exist because they are ignored.

19 The Army has failed to interview enough people
20 who served, worked or lived or witnessed what happened
21 in Fort Ord since 1914 when the base opened. The Army
22 only contacted or interviewed 23 people, of which only
23 seven were referenced in the draft ordnance and
24 explosive remedial investigation feasibility study
25 literature review report. Those 23 people were not at

1 Fort Ord from the beginning to the end. They could not
2 have witnessed every incident, accident, authorized
3 burial, unauthorized burial and dumping that was
4 apparently common on the Superfund site known as the
5 former Fort Ord.

6 A Marina city council member told several
7 residents that he used to watch soldiers bury ordnance
8 and dig it up when he was a kid. He saw nothing wrong
9 with this. I'm not sure if he's yet reported this to
10 the Army, but I sure wish he would. The Army and
11 Harding Lawson Associates admit the records have been
12 lost or destroyed. The archive search report is
13 incomplete. Police records and newspapers were not
14 thoroughly searched because it would take too long.

15 The ordnance removal contractor, U.S.A.
16 Environmental, Incorporated, does not fill out incident
17 reports in response to ordnance finds that they would
18 determine are OE scrap. All OE, OEW, UXO and OE scrap
19 must be fully documented. If OE scrap is found, that
20 proves that OE was used in the area.

21 The Army fails to assess and evaluation these
22 properties and others for, A, hazardous substances and
23 contamination; B, environmental impacts anticipated from
24 intended use; C, ordnance and explosives; and, D, the
25 adequacy of use restrictions and notifications.

1 The Army's draft ordnance and explosive
2 remedial investigation feasibility study program is
3 absurd in its inconsistencies. In the draft literature
4 review report, there is a paucity of contacts or
5 interviews, missing records, lack of documentation,
6 inadequate sampling, inadequate site walks, et cetera.
7 It proves that more interviews, investigations, testing
8 and action is absolutely necessary for the protection of
9 human health and the environment.

10 The future uses of these properties and others
11 at the former Fort Ord does indeed present a current and
12 future risk to human health and the environment. The
13 Army has repeatedly failed to comply with the laws that
14 are set in place by the U. S. Government and the State
15 of California to protect human health and the
16 environment. The Restoration Advisory Board must be
17 reestablished. The community must be informed in order
18 to oversee the cleanup process.

19 The Army would not rather not have the public
20 and community involved even though it is and will be the
21 public and surrounding communities who are and will be
22 suffering if a proper cleanup is not implemented.

23 The citizens of the Monterey Peninsula would
24 know very little if it were not for the EPA's technical
25 assistant grant recipient, the Fort Ord Toxics Project.

1 The surrounding cities and the Fort Ord Reuse
2 Authority must not be so greedy as to risk the health
3 and safety of humans and the environment with this early
4 or dirty transfer.

5 I understand why the Army wants to dump this
6 land on our cities. The Army is known for dumping toxic
7 and dangerous substances and materials. Why are the
8 surrounding cities and the Fort Ord Reuse Authority also
9 willing to harm their citizens and the environment?

10 Whereas the Army fails to adequately describe the
11 environmental condition of the property, whereas the
12 Army has failed to interview numbers of people who
13 served at Fort Ord, whereas the Army admits to missing
14 or destroying and a lack of documentation, the Governor,
15 EPA and DTSC must not defer the covenants that are
16 required by law to protect human health, safety and the
17 environment.

18 As a member of the community, I ask for you to
19 protect the current and future residents of beautiful
20 County of Monterey. Thank you very much.

21 MR. LOWRY: Thank you very much.

22 MS. BEST: The next two speakers are Tony
23 Lombardo and Jim Perrine and Rob Swifield.

24 MR. LOMBARDO: Good afternoon, Mr. Lowry,
25 members of the committee. Anthony Lombardo.

1 I don't have a fancy acronym. I'm a housing
2 advocate for Monterey County, which is a pretty nice way
3 of saying attorney, I guess.

4 I've done a lot of work representing low income
5 and farm worker housing projects throughout the county
6 of Monterey. I think something that may be missed in
7 some of these discussions is the fact that there are
8 other environmental and public health hazards than
9 unexploded ordnance or toxics. Those are lack of decent
10 housing. In the City of Monterey, for example, 60
11 percent of the residents rent their homes. They do not
12 own them. 43 affordable housing units that came
13 available near the City of Monterey last year, those are
14 in the \$180,000 range, by the way, for those of you who
15 aren't familiar with Monterey housing prices, we
16 consider anything under 200,000 affordable, after a
17 newspaper article appeared saying that the project was
18 being built, within the next week there were 500 people
19 on a waiting list for those houses.

20 95 percent of the first-time home buyers in
21 Monterey County can't buy a home and people at the lower
22 end of our economic scale, our farm workers, our service
23 industry workers, are completely disenfranchised. It's
24 not unusual to find eight adults living in a
25 250-square-foot hotel room or motel room in our of the

1 agricultural communities. It's not unusual to see our
2 newspapers filled with stories about people dying
3 because the converted garage they're living in with two
4 other families caught fire in the middle of the night.

5 So there are other public health issues that we
6 face in Monterey County which are issues that speak
7 loudly towards arriving with your help at a standard
8 that will make land available in Fort Ord so that we can
9 provide decent and relatively affordable housing for the
10 entirety of our community. Our own natural population
11 growth in Monterey County exceeds our ability to provide
12 housing. If no one else ever moved to Monterey County,
13 our children can't move back there because we don't have
14 enough area for housing supplies.

15 Because there are other public health issues
16 that we face in Monterey County, salt water intrusion in
17 our Salinas Valley, the protection of our farmland,
18 which was you know, CEQA says conversion of farmland is
19 a significant environmental impact.

20 We face problems of lack and water and sewer
21 infrastructure. Another agency down the street here,
22 the State Water Resources Control Board, decided a
23 couple years ago that on the Monterey Peninsula we had
24 overburdened our water checkbook by two-thirds of the
25 water that was being consumed by the existing residents.

1 Fort Ord is really our sort of last and best
2 hope as housing opportunity because the rest of Monterey
3 County is either overtaxed for water, overtaxed for
4 traffic or is overbuilt or completely built out.

5 That doesn't mean we should plunge headlong
6 into the development of Fort Ord without doing what some
7 previous speaker says was having an acceptable cleanup
8 and having risks that are acceptable because I don't
9 think there is anything we do in our life that doesn't
10 involve some risk. Getting out of bed in the morning
11 clearly has some risk associated with it, driving to
12 Sacramento as well, but I think from what I've heard
13 today there are cleanup methods that can be employed,
14 there are cleanup standards that can be employed that
15 can allow development of these sites.

16 And keep in mind, I don't believe at Fort Ord,
17 at least none that I'm familiar with, are they proposing
18 to develop housing on anything else on shooting ranges
19 or bombing ranges or artillery ranges. They are
20 proposing to develop it on sites, at least that I'm
21 familiar with, that have been either previous some kind
22 of buildings or uses or previous campgrounds or
23 bivouacs, whatever the military term is for that, that
24 have not been used for heavy ordnance uses.

25 Acceptable risks, for example, when we do

1 housing developments, within four feet of the surface,
2 we find things. In any housing development you have
3 high pressure gas lines, high voltage electricity lines
4 buried, high pressure water lines. Those are all things
5 that are acceptable risk within a certain depth of
6 surface. I think that we can with your help, and I
7 think the CEQA process clearly is involved here, arrive
8 at standards which can be safe for the community and can
9 allow Fort Ord to be used for what is most desperately
10 needed in our community, which is some available housing
11 sites to support our entire community. Thank you.

12 MR. LOWRY: Thank you very much for coming.
13 Now, we're honored with Mayor Perrine from the City
14 Marina. Welcome, Mr. Mayor.

15 MR. PERRINE: Thank you, Mr. Lowry. Jim
16 Perrine. I'm here as the first vice chair of Fort Ord
17 Reuse Authority. I'm here to represent the eight
18 communities that that comprise the membership of Fort
19 Ord Reuse Authority, as an official spokesperson for
20 those eight communities.

21 A few observations on the workshop today. I'd
22 like for the record, we would encourage that there needs
23 to be some consideration and information research done
24 into the European experiences. There are many
25 historical reuse activities that have occurred in

1 explosive ordnance areas throughout Europe and
2 throughout other parts of the world that we should be
3 looking at used for high density housing and have been
4 done so for decades.

5 We also observed that we need to include in the
6 discussions finance and insurance industry
7 representatives and have their participation to get
8 their involvement in the knowledge base.

9 And, finally, we observe that there are no
10 reuse authorities that were invited to be speakers and
11 we encourage that their membership and discussion is
12 also a vital part of any partnership towards
13 understanding these issues, and so we feel that's a
14 serious shortcoming.

15 So we feel that at the very least we encourage
16 that there be further workshops and that we have the
17 reuse authorities, the finance and insurance industries
18 participate in those further workshops. And we also
19 encourage that we have an interactive and collaborative
20 process.

21 As many of the speakers mentioned today, we
22 need a synergy, a partnership that in order to make the
23 process work. And that synergy and partnership needs to
24 balance all of societal needs.

25 We also would like to express that some of the

1 examples provided today on some of the concerns or
2 problems in some of the reuse activities, and many of
3 those, I submit, are not necessarily reuse because they
4 were FUD sites versus BRAC sites, and we should make
5 some distinction between those. But many of those
6 problems are good examples and good information, but we
7 should not use those as an indictment of the current
8 processes.

9 The state agencies should be involved and
10 should be part of the process, but we also need to
11 understand that the state and federal regulatory
12 agencies are fallible as well. We have instances where
13 state and federal regulatory agencies have also caused
14 problems for our societies in the past, the most recent
15 which, I would remind you, is the MTBE issues that is
16 causing great alarm and concern and expense to many of
17 our communities. So that's why we need to have a
18 partnership so that we're all participating in the
19 process and we're all understanding what is at risk and
20 what's at stake. Thank you.

21 MR. LOWRY: Thank you, Mr. Mayor. I'll make a
22 personal commitment to work collaboratively with you on
23 this process. Your comments are thoughtful, and we're
24 going to take them to heart.

25 MR. SCOFIELD: Good afternoon. My name is Rob

1 Scofield, and I am a practitioner of chemical risk
2 assessment here in California, and I would like to offer
3 one brief comment that occurred to me listening to the
4 discussions today on the issue of benchmarks for
5 significance and benchmark for acceptability of UXO
6 risk.

7 I have worked on several sites where people
8 have asked me to apply my trade to help them evaluate
9 the acceptability of UXO risks, and what I have come to
10 the conclusion is that the methods and the experiences
11 of chemical risk assessment unfortunately offer very
12 little towards fitting the needs of evaluating UXO, the
13 physical risks from UXO, but it did strike me today,
14 however, that land use planning often has to address
15 other physical hazards. Should you build a housing
16 project next to an oil refinery, next to a chemical
17 plant, should you put businesses underneath flight paths
18 or airports, et cetera. And it struck to me today that
19 some of that experience, both the process and the level
20 of risk that has been accepted in those public planning
21 decisions may actually be a place for us to look to help
22 evaluate the acceptability and benchmarks for
23 significance of UXO's explosive risks.

24 Now, I say that with one very big caveat, and
25 that was something that was alluded to several times

1 today and that is that UXO risks pose a very different
2 psychological and emotional impact on all of us than do
3 other kind of risks, because of the very personal
4 nature, they happen to one person and the cause is seen
5 right away. So if you try to use those dispassionate
6 evaluations comparing to airports or chemical plants, I
7 think you would miss part of the picture in terms of
8 community acceptability, but I did want to make the
9 comment that I think there may be some lessons in those
10 land use planning for us to learn from for UXO. Thank
11 you.

12 MR. LOWRY: Thank you. Do we have any other
13 members of the public to wish to comment or any of am
14 prepared speakers who would like to add any other words
15 in oral form?

16 Yes, Lenny.

17 MR. SIEGEL: You may have been planning to say
18 this anyhow, but I guess my question is for you, you've
19 heard a lot of good input today. Where are you planning
20 to take it?

21 MR. LOWRY: Didn't Jack Nicholson say only 30
22 seconds from a clean get-away?

23 (Laughter.)

24 MR. LOWRY: What we are going to do with this
25 is take very seriously your comments. I'm going to

1 reread -- not reread, since I haven't read it in the
2 first place. I will read the transcript. We are
3 committed to put in whatever work is required to get to
4 where we need to go on UXO issues.

5 I just made a commitment to Mayor Perrine and
6 will make it to the rest of you that we're going to work
7 hard on this issue. I think it's clear that no one in
8 this room has all the responses and there are still some
9 vexing questions which need to be asked, but I'm very
10 hopeful from what was said that we can go forward to get
11 some solutions.

12 Looking at the rules, what regulations or
13 standards in whatever form they now exist, I think there
14 is room to look at site specific conditions to get where
15 we want to go. I think there was a concern in the
16 community or parts of the community that this was a
17 first step in developing regulations. I haven't heard
18 anything today which leads me to think we're ought to go
19 through a regulations process.

20 What I think I've heard today is the need for
21 further analysis and maybe this department needs to put
22 its heads together and do some guidance or other types
23 of documents so it's clear both to the people who work
24 within the department and the community as to where
25 we're going and what we expect.

1 Frankly, I was, I guess not surprised, but just
2 a tiny bit disappointed that the acceptable risk is
3 whatever we think is acceptable. That's kind of what I
4 got from the discussions. That is very hard to --
5 that's impossible certainly to quantify. It is hard to
6 implement, but maybe in the long run you know when
7 you're protecting the community and you know when you're
8 not, and maybe that's what the words acceptable risk
9 mean.

10 So in wrapping this up, I applaud all of you
11 who have stayed till 4:30 today. It's been a, I think,
12 productive day. I want to thank everyone who came, both
13 who said something and both who listened. Particular
14 thanks to our reporter, to Claire Best, the people
15 sitting to my right and left and to Jim Markson, maybe
16 he's already left, in the back of the room, who did a
17 good job putting things together. It's something
18 government needs to do, but it doesn't always run
19 smoothly. I think just mechanically we had a very well
20 run and smooth process today. Thank you very much for
21 your patience, your good humor and your sage thinking.

22 With that, I hope to see all of you at some
23 other time.

24 (Whereupon the Unexploded Ordnance
25 Workshop was concluded at 4:30 p.m.)

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